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CONDITIONING
ERATION
the Industry

NEWS

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Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Stories of the Week
Inflation Note
Breathless Announcement
Honi Soit Qui
Mal Y. Pense
Bob Hood's Philosophy

Stories of the Week

Beloved "dear Alben" Barkley — Kentucky judge, congressman, senator, and "Veep" (Vice President of the United States) — gained much of his fame and acclaim through witty oratory. Samples:

Upon being nominated for the Vice Presidency he started his acceptance speech: "Inasmuch as I am about to enter upon the discharge of the duties of an office that requires four years of silence, I will be brief in my acknowledgment."

When he was a young man he addressed an alumni gathering at a college in Kentucky. Later the chairman of the committee which invited him gave three criticisms of his speech: "In the first place you read it. In the second place you read it poorly. And in the third place it was not worth reading." That advice the late Alben Barkley heeded the rest of his life.

He had a lot of fun going to various festivals and crowning their "queens." Quoting the Veep:

"It seems to be an unbroken rule that any man who crowns a queen is expected to kiss her. It is, of course, not a rule that any real heroic or romantic man would seek to avoid, and I have complied with that rule in every case without protest on my part."

As a freshman representative in Congress, Barkley instinctively "grabbed abolt" of a voter-sensitive political issue, to wit:

A bill raising the salaries of Congressmen.

An Indiana representative who led the fight against this bill enlisted young Alben's willing assistance. Together they checked off the negative votes they'd lined up, until the gentleman from Indiana became alarmed.

"Barkley," he buck-acred, "round up all the boys in the cloakroom before this comes to a vote. We're liable to win!"

Inflation Note

The price of wooden nickels has gone up to six cents!

Marvic Co. of Brooklyn man-
(Concluded on Page 10, Col. 1)

FTC 'Road Maps' Way to Fair Trade Practices for Cooling Contractors

WASHINGTON, D. C.—Trade practice rules for the "refrigeration and/or air conditioning contracting industries" were promulgated May 8 by the Federal Trade Commission.

The rules become operative 30 days from that date. They do not legislate any new laws but rather provide a "road map" which prevents violation of existing laws through ignorance, it has been pointed out.

Suggested trade practice rules were originally proposed by the

Text of Trade Practice Rules appears on Pages 33 and 34 of this issue.

Refrigeration & Air Conditioning Contractors Association at a general industry conference held in Chicago last May.

The rules themselves are, except for minor changes, the same as in a draft of proposed rules published by the commission last December. However, the designation of the business covered by the rules was changed from the "refrigeration and air conditioning contracting industry" to the "refrigeration and/or air conditioning contracting industries."

Also, the "industry defined" section of the proposed rules, which prompted considerable debate at public hearings earlier this year, has been rewritten and appears in the final rules under the heading, "Applicability of the Rules."

As the definitions are now written, the rules would not seem to apply to heating systems by themselves but would apply to year-round air conditioning systems.

The section "Applicability of the Rules" states that they have application to persons, firms, corporations, and organizations engaged in the sale and installation of:

"(1) Mechanical refrigeration units or systems for commercial or industrial use; or

"(2) Mechanical air condi-
(Concluded on Page 2, Col. 4)

Menke Is Trane V. P.; Heads Conditioner Sales

LA CROSSE, Wis.—Election of Allen C. Menke, 34, as vice president, air conditioning and heating sales, was announced recently by The Trane Co.

Menke joined the company in 1948 and has served as sales manager, air conditioning, since 1954.

In other promotions, R. H. Pearse, Jr., becomes sales manager, air conditioning; William C. Dackis, manager, heat exchanger sales; A. James Hackl, sales manager, packaged equipment; Harry F. Griese, Jr., manager, "Climate Changer" sales; and C. L. Ringquist, manager, applications engineering department.

ASRE Adds Talks On Frozen Foods To June Meeting

NEW YORK CITY — Technical sessions and conferences, forums, symposiums, installation of newly-elected officers, and social and educational activities are on the agenda for the 52nd annual meeting of the American Society of Refrigerating Engineers to be held June 4-6 at the Hotel Sheraton-Gibson in Cincinnati.

This year's newly-added conference on frozen foods will cover 10 phases of this industry. There also will be separate conferences on domestic refrigerator engineering and air conditioning. In addition, the technical program will include three specialized sessions, a research symposium, an educational meeting, and six open forums.

Some 700 delegates, guests, and other representatives of the air conditioning and refrigeration industries in the United States and Canada are expected to attend the meeting.

C. M. Ashley, chief staff engi-
(Concluded on Page 39, Col. 1)

Sutton Fire Will Not Affect Shipments

WICHITA, Kan.—A fire last week in an auxiliary warehouse of The O. A. Sutton Corp., which caused loss estimated at \$500,000, has in no way affected production or shipment of merchandise, according to Dale Gordon, executive vice president.

The warehouse is one of several the company uses for storing merchandise. It was completely covered by insurance so there will be no loss to the company, Gordon said.

"Production was not affected at all because this was strictly a warehouse," Gordon pointed out. Also, he said, the fire "has not affected shipment of merchandise at all because similar merchandise was scattered around town in other warehouses."

In addition to units, there was some promotional material in the warehouse.

Chicago Checks New Home Units for Adequate Wiring

CHICAGO—Recently acquired residential air conditioning units here were inspected for adequate wiring, it was reported.

Older installations of air conditioning equipment will be examined later, according to William P. Hogan, Jr., the city's chief electrical inspector.

Hogan said most home wiring systems were never intended to carry the high current load necessary to operate such units with safety.

ARI Opens Campaign To Give 'Force' To Rating Standards

House Group Tentatively Ok's End to Parts Excise Tax

WASHINGTON, D. C.—The House Ways and Means Committee has tentatively approved a subcommittee recommendation that the present manufacturers' excise tax on refrigerator components be eliminated.

Repeal of the tax would result in an estimated revenue loss of about \$1,000,000 a year to the Treasury.

The committee also tentatively approved a few other subcommittee recommendations for technical changes in Federal excise taxes as it began closed-door sessions on the report submitted by the subcommittee last month.

Among other things, the tentatively-approved changes would ease the tax treatment of fans. The 5% manufacturers' excise tax would be applied only to electric, direct motor-driven fans and air circulators if they are of the household type.

Committee members indicated it would be some time before they completed action on the subcommittee recommendations.

Koch Redesigns Package Air Conditioner Line

KANSAS CITY, Kan.—Koch Refrigerators, Inc. here reports that many new features have been incorporated into its 1956 packaged air conditioner line, which will now include 3, 5, 7½, 10, and 15-hp. models.

The new line has been completely redesigned from top to bottom, with greater emphasis on smaller cabinets and increased performance, Koch officials declare.

To make possible a complete installation of attractively matched units, and with an eye to the increasing emphasis on color coordination in modern decor, the cabinets have been finished in "Copper Mist" enamel to blend with any contemporary color scheme. The
(Concluded on Page 4, Col. 5)

'We Must Take the Lead' Officers Tell Members; Lawler New President

HOT SPRINGS, Va.—A vigorous program designed to make effective the testing and rating standards developed by the Air-Conditioning & Refrigeration Institute, and to make the public conscious of them, was pledged by officers of the ARI at the association's annual meeting here last week.

Matthew Lawler, vice president, Worthington Corp., and new president of ARI, devoted most of his remarks on taking office to the subject stating that—



M. M. Lawler

"We in ARI must go beyond just merely promulgating standards—we must see that they take effect."

Lawler said that a committee has been named to study the matter of certification and enforcement of ratings standards and that "as president of ARI, I am determined to press this matter, and I hope to be able to report substantial progress at the time of the next annual meeting."

Other new officers of the association are: vice president, Lud Emde, president, Temprite Products Corp.; treasurer, C. E. Buchholzer, president, Airtemp Div. of Chrysler Corp.

Four newly elected members of the ARI board of directors also took office. They are D. P. Barrett, general sales manager, Davison Chemical Co.; Rudy Berg, vice president, Copeland Refrigeration Corp.; Charles T. Lawson, executive vice president, Kelvinator Div., American Motors Corp.; and D. R. Moerick, vice president, Controls Corp. of America.

In line with the announced intention of giving effect to ratings standards, the ARI Room
(Concluded on Page 37, Col. 1)

BEHIND PAGE ONE . . .

Summer Cooling with 'Wet' Heating

Four Methods for Old and New Homes 6

Torque Motor vs. Solenoid

Engineer Tells Why He Believes Torque Motor Is Replacing Other Forms of Energy Conversion . . 16

Air Conditioning the Jefferson Hotel

95-Ft. Throw from Outlet Cools Old Fashioned Banquet Room Without Any Ducts in the Room . . 18

Sizing, Locating Cooling Tower Pumps Heat Pump for Dental Clinic

Air-to-Air System Uses Little Space, Needs No Stack 32

Text of Trade Practice Rules

Servicing Auto Air Conditioners 33

Regular Features

Editorial 20 What's New 28
Refrigeration Problems . . 36 Patents 38

What's in a name?

QUALITY

...if the Name is

READING

COPPER TUBING

FOR REFRIGERATION
& AIR CONDITIONING
EQUIPMENT



READING TUBE CORPORATION

EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

FTC Trade Practice Rules--

(Continued from Page 1)

tioning units or systems for commercial, industrial, or home use.

"(Note 1: As above used, the word 'installation' makes reference to services the performance of which requires engineering knowledge and skill. Thus, window air conditioning units and mechanical refrigeration units which are of such size and type as to require but a 'plug in' to an established electric power system are not to be considered as products to which these rules have application.

'Installation' Requires Engineering Knowledge, Skill

"(Note 2: As above used, the words 'air conditioning units or systems' make reference to units or systems which are either capable of lowering, or of both

lowering and raising, the temperature of the air within an enclosure and simultaneously effecting a substantial degree of control of the humidity and circulation of the air in such enclosure. Units or systems which are designed to raise, but not lower, the temperature of air within an enclosure are not products to which these rules have application.

Definement of Activities Not Products

"(Note 3: The above is to be construed as definement of the nature of activities to which the rules have application and is not intended as definement of the kind of products which may be designated 'air conditioners' or 'refrigeration units or systems.')"

The last sentence of Note 2 and all of Note 3 did not appear in the proposed rules.

Mfrs., Wholesalers, Sellers Not To Be Considered Here

A statement by the commission explains that "Manufacturers, wholesalers, and others engaged in the sale of air conditioning or refrigeration equipment or systems are not to be considered as members of the industry except to the extent that they install (as hereinbefore explained) such equipment or systems."

The commission also states: "According to available information, the aggregate annual sale of industry products is between four and five billion dollars."

Primary Objective Stated

"Primary objective of the rules," the commission points out, "are the maintenance of free and fair competition and the elimination and prevention of unfair methods of competition, unfair acts or practices, and other trade abuses. They are to be applied to such end and to the exclusion of any acts or practices which suppress competition or otherwise restrain trade."

Industry Applied to FTC For Setting Up Rules

"Proceedings for the establishment of rules were instituted pursuant to industry application. A general industry conference was held in Chicago on May 20, 1955, at which proposals for rules were submitted for the consideration of the commission."

"Thereafter, a draft of proposed rules was published by the commission and made available to all industry members and other interested or affected parties upon public notice whereby they were afforded opportunity to present their views. . . ."

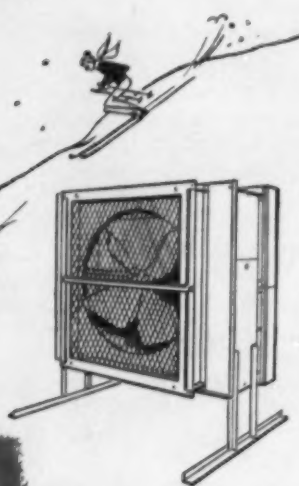
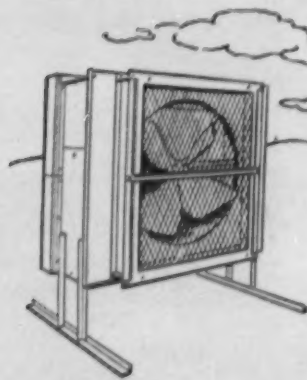
The commission further notes that pursuant to such notice, public hearings were held in Detroit on Jan. 6, 1956, and in Washington, D. C. on Jan. 20, "and all matters presented at said meetings, or otherwise received in the proceeding, were duly considered."

"Thereafter, and upon full consideration of the entire matter, final action was taken by the commission whereby it ap-

(Concluded on next page)

whether it's Summer

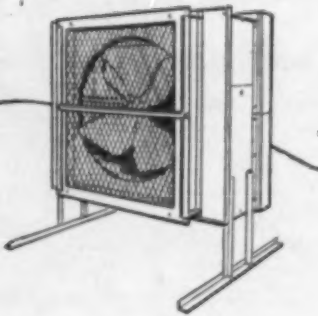
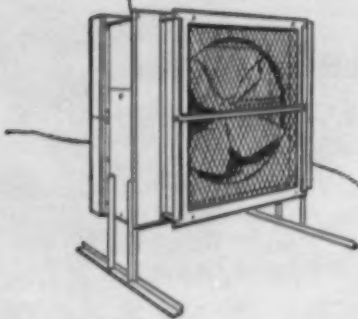
. . . Winter



The ALL-SEASON WINTERSTAT with the KRAMER UNICON

makes the operation of an air conditioning system fully automatic at any outside temperature and now eliminates manual changeover from season to season

UNICON plus Kramer's patented Winterstat now gives you the ALL-SEASON UNICON — the only air-cooled condensing system providing predetermined minimum head pressure all the way to the expansion valve.



High Noon. . .

or cool of evening

KRAMER TRENTON CO. • Trenton 5, N.J.

FTC Maps Rules- 'Water Wasters' Put In After May 7 To Be Charged \$7.50 Per Ton In Detroit

(Concluded from preceding page) proved the Group I rules set forth."

Commissioner Robert T. Se-crest has indicated in past statements that each industry member would be sent a copy of the rules along with an acceptance form, "which the industry member may sign if he so desires."

"If the industry member does not care to subscribe to the rules, he is perfectly free to refuse to do so. Failure to sign in no way excuses him from full compliance with each and every applicable law administered by the commission."

RACCA Hails Action, Urges Application

CLEVELAND — Issuance of the new Trade Practice Rules for the "refrigeration and/or air conditioning contracting industries" by the Federal Trade Commission was hailed immediately by W. Ray Kromer, executive vice president of the Refrigeration and Air Conditioning Contractors Association.

In a bulletin to local associations throughout the country he urged them to "immediately arrange for a meeting of all refrigeration and air conditioning contractors in the community that the rules be thoroughly discussed and interpreted."

Fair Trade Laws Can Remedy Situation

"Shrinking profits caused by price discrimination and misrepresentation of equipment, materials, and capacities can be remedied to a great extent through the proper and intelligent use of fair trade laws as explained and spelled out in the rules of practice," he declared.

He noted that RACCA had applied for the rules and had fought for them through four separate hearings. The rules of practice are an interpretation of existing fair trade laws which have been designed to protect industry and those engaged in it.

Contractors May Register Intent To Comply

Contractors may register their intent to comply with these rules, he said.

"All contractors involved in the air conditioning and refrigeration business are subject to the rules whether or not the intent to comply is filed," he warned.

Report Violators To FTC Rules of Practice Div.

"Unethical operators and those who unintentionally violate the rules may be reported to the Rules of Practice Div. of FTC," he asserted. "Should they be found in violation, they will be given the opportunity to discontinue the practice."

Should a recurrence of the deceptive practices be reported, the Division of Investigation will follow through. The complaint will be checked and when found authentic by trial, the offender will be notified to cease and desist.

"A violator of a cease and desist order can be fined up to \$500 per day on each count."

DETROIT — A set of rates and rules—considerably milder than those recently proposed by the city water board—were announced on May 7 by the Detroit Board of Water Commissioners to govern the use of non-conserving, water-cooled air conditioning equipment for comfort cooling.

No Charge This Year

While no demand charge will be asked this year, a fee of \$7.50 per ton of refrigeration will be applied next year and thereafter to non-conserving systems installed under permits issued after May 7, 1956.

On air conditioning systems installed under permits issued on or before May 7, 1956, a fee of \$1.50 per ton of refrigeration will be applied next year. This

fee will be increased each succeeding year by \$1.50 per ton until it reaches \$7.50 in 1961. It will remain at \$7.50 thereafter.

Previously the water board had proposed that all non-conserving equipment be assessed \$5 per ton in 1957, \$10 per ton in 1958, and \$15 per ton in 1959 and thereafter.

Water Conserving System Defined

The water commissioners defined an approved water conserving system as one:

"a. Which is equipped with cooling tower, atmospheric condenser, spray pond, or other equipment which shall directly or indirectly cool refrigerant, and

"b. Which can use water from

the Detroit water system only for makeup water to replace water lost by evaporation or by flushing of the equipment, and

"c. Which uses an average of less than 12 gals. of water from the Detroit water system per hour per ton of cooling capacity when the unit is operating, and

"d. Which has no piping connection to allow operation of the air conditioning unit by direct use of water from the Detroit water system either in conjunction with or in place of such cooling tower, atmospheric condenser, spray pond, or other recirculating and heat exchanging equipment."

Owners of units that meet these qualifications, the rules say, can use water as the cooling medium without recirculation between Oct. 1 and May 1 without paying the demand charge.

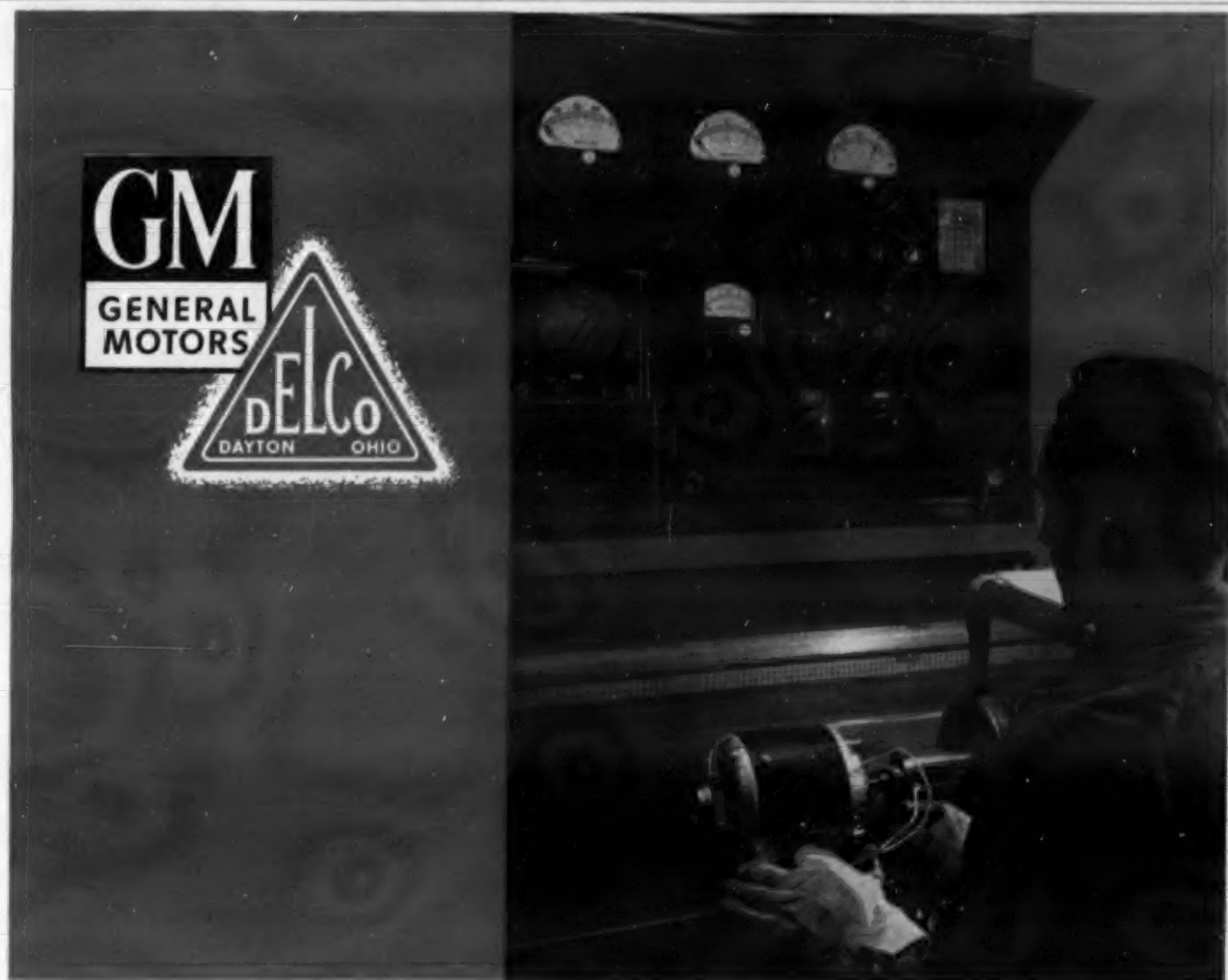
The demand charge—over and above the regular water rates—will be billed on or about May 1

each year. It is payable in a lump sum or in four installments during the months immediately following the due date.

The entire annual charge will be applied to units installed and connected to the city water system prior to July 1. A 25% reduction will be made for units installed in July, a 50% reduction for units installed in August, and a 75% reduction for units installed in September. No charge will be made for units installed after September for that calendar year.

Conversely, no charge will be made for units disconnected or converted to the approved water-saving type before May 1. Those disconnected or converted during May or June need pay only 25% of the annual charge; during July 50%, during August and September 75%, and after September the full charge.

The commissioners declared that the same rules apply to suburban users of Detroit water.



DELCO'S FINAL TEST: This is where we put the customer satisfaction in!

Because Delco Electric Motors will carry your reputation to the market place, Delco Products makes this *extra* examination—the one that puts the customer satisfaction in!

Expert hands and sensitive instruments check performance under simulated operating conditions in a "quiet room." Already, the motors have passed a long series of tests and inspections, but—in this room—we check again.

That's why, within the limits of science, every Delco Electric Motor is *right*. And that's why they are preferred for use in millions of America's most famous appliances and machines.

Delco Products makes a complete line of quality-built and quality-tested fractional and integral horsepower electric motors. Complete engineering assistance is also available. Call your nearby Delco Products Distributor or Sales Office.



DELCO *Electric* MOTORS

DELCO PRODUCTS, DIVISION OF GENERAL MOTORS, DAYTON, OHIO

Proved best by Performance!



Dealers

are

Making Money!

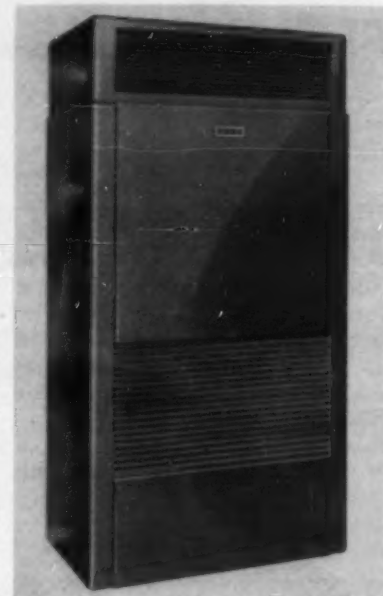
Erdal Is Sales Mgr. At Drayer-Hanson Div.

LOS ANGELES—Arnold Erdal has joined Drayer-Hanson, Div. of National-U. S. Radiator Corp., as sales engineer, it was announced recently by Fred E. Schmuck, national sales manager.

Erdal was most recently connected with Airflow Engineering, Albuquerque, N. M., in a sales engineering capacity, devoting much of his time to residential applications.

Hotel To Be Conditioned

BIRMINGHAM, Ala. — According to Bill Wright, new manager of the Molton hotel here, an extensive modernization program is under way and present plans call for further improvements including additional air conditioning.



ONE of a new line of packaged air conditioners being introduced by Koch Refrigerators, Inc. The matching series of units, in 3, 5, 7½, 10, and 15-hp. sizes, features a compact cabinet design, finished in "Copper Mist" enamel.

Koch Line--

(Concluded from Page 1, Col. 4)
entire series is matched both in color and in functional, streamlined design.

To assure quiet operation, Koch engineers have designed the supply and return air grilles to give proper air volume and low velocity air return at extremely low noise levels. The plenum and the exterior walls are heavily blanketed with fiber glass insulation.

UNUSUAL CABINET FEATURES

Engineered so that installations may be adapted to a variety of space or temperature conditions, the unique new "Versa-Unit" cabinet design incorporates a number of unusual features. Water, electrical, or drain connections can be brought out through either side depending upon the cabinet's location.

The separately framed fan section may be rotated for top-vertical, front-horizontal, or back-horizontal discharge of air. The grille in the plenum is equipped with individual, adjustable louvers so that air can be accurately directed up, down, or to either side.

MODELS AVAILABLE EQUIPPED FOR WATER, AIR COOLING

Every model is available specially equipped for either water or air-cooled installations, and may be used with city water or cooling towers. The 3 and 5-hp. models may be furnished either single or three-phase; all larger models (7½, 10, and 15 hp.) are three-phase and provide a ventilating fan for use in mild weather and a full-power cooling system for very hot days.

Sectional construction permits access to, and installation in, cramped areas for the utilization of space that might otherwise be wasted.

In order that the same unit can be used for heating, Koch has provided optional heating coils; these one or two-row steam or hot water coils may be installed at the factory, or can be easily added to the unit after installation.

To complete the installation, Koch also provides matching air-cooled condensers, water towers, and pumps.



• Every Viking had to become master of the traditional bow and arrow of his people. In its great strength, resilience and toughness rested his ability to fight, to hunt, to protect himself and his family. His very life depended on it!

Today, in the commercial refrigeration and air conditioning industry, the name VIKING in copper tubing has also become synonymous with strength and durability. Through its quality and precision VIKING has set a standard for the industry . . . and VIKING craftsmen, true to the tradition of their namesakes, continue to develop the very finest in copper tubing . . . a tubing worthy of the name VIKING!



VIKING copper tube co.

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER AND ALUMINUM TUBING

EXTRA STRENGTH

The proper kind of strength and ductility is vital in tubing used for refrigeration and air conditioning purposes. Copper tube possesses these qualities to a far greater degree than other types of tubing. Its uniform temper assures trouble-free fabrication.

EXTRA FLEXIBILITY

Viking Copper Tube is soft and pliable, yet exceedingly rugged. It saves time and labor because it can be coiled, formed, flared and expanded quickly without danger of fracturing or splitting.

CLEAN AND DRY

Viking Copper Tube is triple-sealed at the ends, stays dry and absolutely dirt-free. The seal is made to pass through any opening large enough for the tube itself. It's clean . . . it's bright . . . it's dry!

For more information about products advertised on this page use Information Center, page 28.

ASHAE Unit To Study Nuclear Energy Effect on Heating, Air Conditioning

NEW YORK CITY—Because of the interest in nuclear energy and how it may affect the heating and air conditioning industry, a Nuclear Energy Engineering Committee has been formed by the American Society of Heating & Air Conditioning Engineers.

The chairman of this committee is Ralph A. Sherman, Columbus, Ohio, treasurer of the society and technical director, Battelle Memorial Institute.

Serving on the committee with him are Walter F. Friend,

New York City, Ebasco Services, Inc.; Walter A. Grant, Syracuse, N. Y., vice president, central engineering staff, Carrier Corp.; L. N. Hunter, Johnstown, Pa., vice president engineering and research, National U. S. Radiator Corp.; Burgess H. Jennings, Evanston, Ill., professor and chairman, department of mechanical engineering, Northwestern university.

According to Sherman, one of the objectives of this committee will be "to keep abreast of developments in nuclear energy affecting the heating and air conditioning industry and to serve as the principal source of information in this special field for dissemination by the society."

Husmann Quarterly Sales, Earnings Top Like Period In '55

ST. LOUIS—Sales and earnings of Husmann Refrigerator Co. for the quarter ended March 31 topped year-ago levels, the company has reported.

Consolidated net earnings totaled \$554,621, equal to 88 cents a common share, compared with \$476,305, or 74 cents a common share, in the corresponding period of 1955. Net sales for the quarter amounted to \$7,385,002, against \$7,160,811.

Present indications point to a "continuation of a satisfactory volume of business," according to a statement by W. B. McMillan, president.

Sweden Names 13 Equipment Outlets

SEATTLE—The Sweden Freezer Mfg. Co. has appointed 13 new outlets to handle the company's line of soft serve ice cream and milk shake making equipment, Harvey F. Swenson, president, has recently announced.

They are Markman-Brown, Inc., Montoursville, Pa.; Sweden Freezer Sales of Delaware Valley, Philadelphia; Jerome J. Altman, New York City; Joseph S. Karp & Bros., Cumberland, Md. and Altoona, Pa.; Midwest Restaurant Equipment Co., La Crosse, Wis.; Refrigeration Engineering, Inc., Sioux City, Iowa.

Hepfinger Bros., Store Fixtures, Inc., Cincinnati; Harry Harris Store Fixture Co., Paducah, Ky.; M. E. Stern & Co., Norfolk, Va.; H. A. Redmond Co., Cleveland; Hiawatha Chef Supply, Escanaba, Mich.; and the Millerlei Novelty Co., Evansville, Ind.

The Frosty Refrigeration Co., Inc., Cantonsville, Md., R. & R. Refrigeration Service, Omaha, Neb., have been designated authorized field service organizations.

Deliver-Install-Service
Air Conditioners
Without a Helper



The Fair To Condition Basement, 3 Floors Of State St. Store

CHICAGO—The Fair has announced plans to air condition more than 250,000 sq. ft. of sales area in its main State St. store.

Stockholders at the annual meeting were told the basement and first floor will be air conditioned by the end of July and the second and third floors by the end of August.

J. P. Hansen, president, said the contract has been awarded to Carrier Corp. at "well over \$500,000."

Central refrigeration machinery will be situated in the sub-basement and on the roof of the department store's 11-story building with 16 air conditioning supply units to be located on the sales floor.

Phila. Area Distributors Double 3-Mo. Room Unit Sales over '55 Quarter

PHILADELPHIA—Room air conditioner sales during the first quarter of 1956 by distributors covering the Philadelphia area have just doubled those of the same period last year, figures of the Electrical Association of Philadelphia show.

Distributor members sold 14,086 room air conditioners this year as compared with 6,984 in the first three months of last year. March sales were up 49% over last March.

March sales of dishwashers were up 58% over last year while conventional washer sales gained 35%. Refrigerator sales were just over last year.

Automatic washer sales for March dropped 8%, clothes dryers 9%, ranges 10%, and home freezers 64%.

For the first three months, clothes dryer sales were up 48%, dishwashers 47%, automatic washers 12%, and conventional washers 9%. Refrigerator sales were down 1%, ranges 8%, and freezers 51%.

The report covers Bucks, Chester, Delaware, Montgomery, and Philadelphia counties.

Unit sales for the various appliances were as follows:

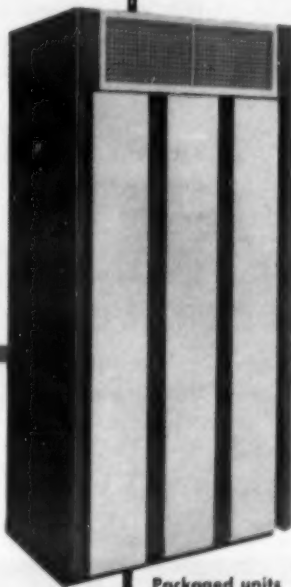
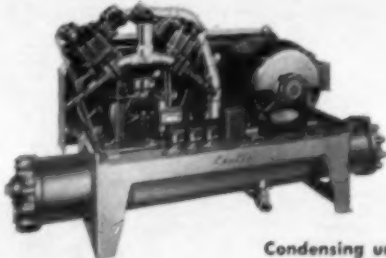
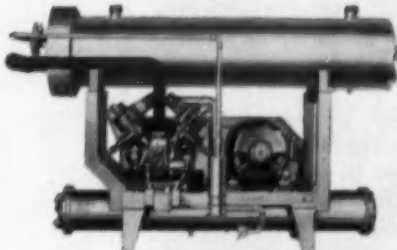
Appliance	March '55	March '56	3 Mos. '55	3 Mos. '56
Air Conditioners	3,801	5,701	6,984	14,086
Refrigerators	5,962	5,982	17,223	17,068
Home Freezers	1,348	486	3,373	1,681
Clothes Dryers	1,315	1,304	3,629	3,381
Dishwashers	510	807	1,353	1,995
Ranges	1,880	1,695	5,239	4,849
Washers, Automatic	4,884	4,531	13,663	15,351
Washers, Conventional	874	1,181	3,142	3,429

3
FACTUAL
reasons
why
Curtis
dealers
can make more money—
CONSISTENTLY:

1 CURTIS has 102 years of experience in manufacturing precision made equipment. One of the first manufacturers of packaged air conditioning units—since 1936.

2 Unsurpassed know-how for building air conditioning units that operate longer with less maintenance and service—YET ARE COMPETITIVELY PRICED with generous profit margin for you.

3 CURTIS provides sales and promotional aids—a complete financing plan—and a national advertising campaign to make your selling easier.



Remember
YOU CAN COUNT ON

Curtis
MANUFACTURING COMPANY

REFRIGERATION DIVISION • 1912 Kienlen Ave., St. Louis 20, Mo.



4 New Ways Outlined To Provide Summer Study Develops Pressure Loss Cooling In Homes Using 'Wet' Heating Data on Branch Flow Fittings

NEWARK, N. J.—In a review of current and future developments in the hot water and steam heating and cooling industry, Robert E. Ferry outlined for heating and air conditioning engineers here recently the industry's four new ways of providing summer cooling in old and new homes where water is the heating medium. He also discussed future uses of atomic heating.

Ferry, general manager of the Institute of Boiler and Radiator Mfrs., presented these facts in an address before the North New Jersey Chapters of the American Society of Heating & Air Conditioning Engineers and the American Society of Refrigerating Engineers, at a joint dinner meeting at the Military Park hotel.

Bright Future for Industry Forecast

Ferry also noted the bright future for the industry in terms of expansion and sales. He announced a 40% increase in sales last year of baseboard-type heating units.

The four ways to provide summer cooling in new or old homes where water is the heating medium, Ferry pointed out, are by means of: (1) heating-cooling convectors, (2) heating-cooling baseboards, (3) cooling convectors with separate heating, and (4) attic cooling units with separate heating. The latter two, he explained, are particularly adaptable to older homes.

Industrial Use Seen For Atomic Energy

Discussing things to come, Ferry stated that atomic energy is rapidly nearing a practicality at industrial levels or as applied to district or central heating plants.

"However," he added, "some major technical break-through is still required to solve the problems affecting its use in individual residential installations."

Ferry, basing his statements on the current thinking of atomic energy experts and government officials, said that there appears to be accord on the feasibility of atomic home heating, judging from strides being made in industrial applications, but that there is disagreement among experts concerning when and how it might be developed for home use, and how economical it might be.

Progress from Research Program Noted

Turning to current advances in home heating, Ferry outlined the progress which has been made as a result of the Institute's heating-cooling research program in a test home at the University of Illinois.

The research program at the University, he explained, has produced striking advancements in hot water and steam heating and chilled water cooling units.

In addition, it has produced tools of practical value to manufacturers and installers of this equipment in the form of testing and rating codes, and calculation and installation guides.

Development of baseboard

type heating units stems, in great measure, from research work at the university, he said.

Also addressing the meeting was Prof. Warren S. Harris of the University of Illinois. He dealt with the latest technical information which has come out of research work on hot water heating and chilled water cooling systems.

Prof. Harris reported that tests on fan-coil type of heating and cooling units indicated a centrally-located system was the most economical to install and to operate. This was true, he said, because the use of a unit in each room using its own blower consumes more electrical power than a centrally-located unit.

CINCINNATI—Studies of rectangular branch flow fittings at Michigan State university have developed design data on pressure losses, it was reported in a technical paper presented at the American Society of Heating and Air-Conditioning Engineers meeting.

Checks Made Into Fittings

Checks were made into various types of branch take-off fittings under the research project sponsored by ASHAE in cooperation with the university's Department of Mechanical Engineering.

The paper was presented by R. J. Waalkes, who had co-authored it with L. G. Miller, dean emeritus of engineering,

and Prof. C. H. Pesterfield.

Nine types of fittings were studied: three different fittings employing a 16-in. increaser section with 90° elbow; three special elbows in 16-in. straight sections; three 45° elbows with 16-in. decreaser sections.

In all three general types, three size ratios of branch-to-main areas were checked.

6 Conclusions Reached

Six conclusions were reached: "1. Performance of the fitting termed the 'decreaser section with 45° angle' was erratic; test data for this type were therefore discarded.

"2. Pressure losses at the junction of the straight branches were negligible for

branch-to-main area ratios above 0.5.

"3. The 'increaser section with 90° elbow' was more effective than the 'straight section with special elbow' at velocity ratios less than about 1.0, and less effective at higher velocity.

"4. At velocity ratios of unity, the test results were in reasonable agreement with published elbow loss data.

"5. The 90° branch losses were only one-third to one-half of those reported for cylindrical butt-type takeoffs, which is to be expected for the range of velocity ratios of the tests.

"6. Over the practical range of velocity ratio for the type of fitting tested, the pressure loss can be expressed as a certain fraction of the velocity pressure in the upstream main, or to a good approximation, by a single value of equivalent diameters of upstream main duct."

Another reason more AIR CONDITIONING DEALERS are switching to

REVOLUTIONARY NEW SLASHES COST AND

- 2 stage, air cooled system • Completely pre-wired • 100% hermetically sealed
- Multiple capacities • Efficient operation regardless of wind pressure

Imagine! An easy-to-install, self-contained unit for whole house cooling... one you can sell profitably and in volume at a new low price!

There's no plumbing, no water tower, no remote cabinets, no refrigerant lines to run: it's a compact and complete package. And the Stowaway's so versatile you can literally choose your method of installation. Aside from low original cost and fast, inexpensive installation—feature for feature it's today's outstanding "buy" in home air conditioning.

Two-stage cooling assures superior humidity control. One compressor is sufficient for normal cooling

operation. But when the outside temperature zooms upward, the second compressor is ready to give the extra cooling capacity needed. Exclusive Lennox "power prop" pumps up to 25% more air, quieter, and at 10% less cost. The pull-through design, overlapping louvers, welded steel and baked enamel cabinet solve weather problems. The condenser serves as a rain-trap... prevents water damage to electrical components, even when exterior installation is made.

Yes, now's the time to join the progressive dealers everywhere who are switching to Lennox—the No. 1 profit line.

So many ways to install... in new homes or old!

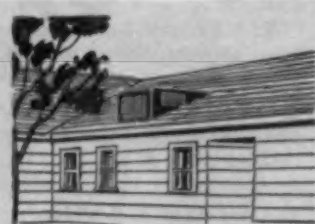
A low cost unit for any type of installation



In a carport



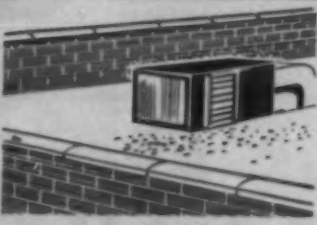
In closet, furred in



In dormer on hip roof



In attic with condenser end outside



On flat or pitched roof



On ground outside house



In attic

Dealer's Direct Mail Promotion Draws 35% Return

Glove Mailed with Invitation To Come In and Get Mate, Register for TV Prize, Proves 'Terrific' for Outlet

CHICAGO — Dealers looking for "something different" in the way of a direct mail promotion might consider one that resulted in a 35% return for Rickbeil's, an appliance, furniture, and hardware outlet in Worthington, Minn.

Hardy Rickbeil, head of the firm, described the promotion at the annual convention of the National Appliance & Radio-TV Dealers Association. He said the promotion proved "terrific for us."

The firm mailed a left-hand jersey glove to area residents along with a letter which said:

"Dear Friend:

"This one glove for your left hand isn't much good by

itself, but it is our friendly invitation to come in any time during the next two weeks and register for the beautiful new 1956 RCA Victor television set we are giving away. We have the mate to the enclosed glove for you to pick up when you stop to see us.

Come See Brand Names, Bargains

"We are anxious to have you see the Famous Brand Name lines we carry and we know you will be pleased at the many, many terrific bargains we have.

"Thanks in advance for accepting this invitation and

we will look forward to seeing you soon."

Under Rickbeil's signature and the slogan, "We Serve to Serve Again," was this postscript: "Present this letter to any of us for your right hand glove." Below were pictures of Rickbeil and Salesmen Ray Ager, Frank Schuster, Bill Falknor, and Mike Christensen, and their telephone numbers.

Under the photos was this suggestion: "If you can't come in during the day, phone any of us for an evening appointment." The letter also bore the trademarks of manufacturers whose products the firm handles.

During the three-month promotion, Rickbeil's mailed 8,000

letters—200 to 400 at a time. A 35% return on the mailings made the campaign the most successful direct mail promotion ever conducted by the firm, according to Rickbeil.

Rickbeil pointed out that the firm screens all its promotions with employees. He also noted that fundamentals of selling are stressed over and over again so they won't be forgotten, and that "team spirit" is emphasized.

'Coach' Shows Others How To Earn More

"I think of myself as a coach . . . I try to show the fellows how to make a better living," Rickbeil commented.

He said the firm does about 85% of its business with farmers.

Rickbeil was one of several dealers who took part in a discussion of the topic, "How Well

Do You Handle Yourself?"

Discussion leader was Don Gabbert, Gabbert's, Minneapolis, who was elected president of NARDA at the convention. He urged the dealers to systematize their operations so things will be done in order of their importance, available time will be used to best advantage, and useless activities eliminated.

Gabbert also emphasized the importance of guiding employees and considering what is important to them. He said that when a group of employers were surveyed on what they thought was most important to employees, the answer most frequently given was "wages."

Employees Want To Be Made To Feel Important

But the consensus of a similar survey among employees, Gabbert said, was "a sense of being appreciated and of being in on things; in short, of wanting to be made to feel important."

One dealer reported that he holds daily sales meetings from 8 to 8.30 a.m., with a lot of time devoted to product information. Also, he said, daily reports are required. He added that employees get Wednesday afternoons off, with pay, during June, July, and August.

A dealer whose business grew out of a one-man operation said he found that authority had to be delegated. But, the dealer stated, if he was at the store when it opened, all the problems were turned over to him by the employees who had been given authority to handle them.

So the dealer tried coming to the store about a half-hour "late," and "disappearing" for a while during the day. Result: the employees solved problems without any trouble. Another dealer said he had the same experience.

One dealer observed that when he found he was not making much money, he decided to analyze his business—to find out what items brought in a profit and which didn't, etc. He stressed the importance of studying operations and judging what things are important to making a profit.

Manitowoc Promotion Offers Distributors Cadillacs for Prize

MANITOWOC, Wis. — All Manitowoc distributors recently received a miniature Cadillac car in their mail.

The mailing was part of Manitowoc's campaign, promoting the company's big distributor Cadillac sales contest, it was explained.

The promotion is off to a flying start, according to Tom Hannon, the company's general sales manager. "I have every confidence that when January, 1957, rolls around there'll be a brand new Cadillac in front of the offices of every Manitowoc distributor."

"All the mysterious P.B.I. figures and the fancy unrealistic sales quotas have been tossed out the window," Hannon asserted.

"All that is required of a distributor is that he continue to do the good job he is already doing."



The "Stowaway" is just one of many models in the complete line of home and commercial air conditioners...air and water cooled.

LENNOX

LENNOX

INSTALLATION TIME

"Stowaway"

you **SAVE** up to
\$200 per ton!

can be
installed
practically
anywhere

LENNOX Industries Inc.

Established 1895

Marshalltown, Iowa • Columbus, Ohio
Syracuse, N. Y. • Ft. Worth, Texas
Decatur, Ga. • Los Angeles, California
Salt Lake City, Utah • Des Moines, Iowa

LENNOX Industries (Canada) Ltd.,
Toronto, Montreal and Calgary

CLIP AND MAIL *Today!*

LENNOX INDUSTRIES INC. AC-2
(Address nearest branch. See locations at left.)

Send me more information about the new Stowaway—and other
Lennox air conditioning equipment. No obligation on my part.

COMPANY.....

ADDRESS.....

CITY.....

STATE.....

MY NAME.....

Safeway Stores Teach Employees How To Spot Trouble Brewing In Refrigeration Equipment

CORONADO, Calif.—Teaching specified store employees to observe the function of refrigeration and air conditioning equipment so that trouble can be quickly spotted and corrected is cutting maintenance costs for Safeway Stores, Inc. in Oakland, Calif., according to John J. Robanser, manager of the chain's engineering division. The Safeway preventive maintenance training program was described by Robanser at the recent convention here of the Western States Chain Grocers Association.

Robanser asserted that with maintenance costs running from \$125 to \$170 per month per store, they can easily reflect in the over-all company profit and loss statement if not carefully and economically controlled.

"One of the most important approaches to a maintenance problem in a store," he declared, "is store personnel. We have conducted some exhaustive investigations in a number of our divisions and have found that our store personnel training program is very important."

"In a supermarket having a large number of employees, one or two persons who have a lean-

ing toward mechanical apparatus are selected and trained in accordance with written and verbal instructions on what to look for and how to perform minor maintenance work.

"We must be careful not to create a labor situation by having these men perform any actual machinery adjustments or work with tools. They should only be trained to observe various pieces of equipment in operation. If trouble occurs of a major nature, the service company is called."

"We do not expect to train these men as qualified experts on refrigeration or air conditioning, or place them in the classification of an operating engineer."

3-A Sanitary Standards Amendment for Milk, Milk Products Storage Tanks OK'd

BETHESDA, Md.—An amendment to the 3-A Sanitary Standards for Storage Tanks for Milk and Milk Products was given final approval by the 3-A Sanitary Standards Committees at their regular semiannual meeting at the Kenwood Country Club, here recently.

Additionally, according to Dr. E. H. Parfitt, chairman of the executive committee of the 3-A groups, substantial agreement was reached on 3-A Sanitary Standards for evaporators and vacuum pans, separators, standardizers, and clarifiers.

It was thought likely that these standards may become official before the next regularly scheduled meeting of the 3-A groups in December.

The tentative 3-A Sanitary

Standard for Farm Holding and/or Cooling Tanks has so far gone through five revisions, the most recent being dated Feb. 28, 1956. The draft presented at the Kenwood meeting was not acceptable in all details to all of the participants, however. It was sent back to the farm tank task committee of the technical committee of Dairy Industries Supply Association for still further study.

Two other tentative standards—one for freezers of ice cream and frozen desserts and one for coin-operated bulk fluid milk products venders—were presented by DISA task committees to representatives of processors, who returned the standards to the DISA Groups for still further revision before their presentation to sanitarians' representatives.

A. H. Johnson Celebrates 30 Years as Head of A. S. Johnson Contracting, Distributing Firm

WASHINGTON, D. C.—A. H. Johnson recently celebrated his 30th year as head of the A. S. Johnson Co. here, 81-year-old

air conditioning, heating, and general sheet metal contracting firm. The company is co-distributor

for Chrysler Airtemp equipment with exclusive parts and re-operation facilities for Chrysler products.

404 feet of McCRAY Cases are MOVING MERCHANDISE in this new GATEWAY Food Basket



Convenient low shopping height, swept-back front and other sales-impelling features of McCray cases, brought crowds of customers to this new Gateway Supermarket from the day it was opened. McCray design draws shoppers to the merchandise, makes selection easy, spurs impulse sales.



Frozen Food Island Cases Really Sell



Mass Display of Dairy Products, All Within Easy Reach



Meat Department Has 77½ ft. of Refrigerated Display



Frozen Food Department is Supplemented by Island Display Cases

"Because of the results we have been getting with McCray cases over the past three years we again chose McCray for our newest store," says Dudley H. Everson, President, Gateway Supermarkets, Louisville, Kentucky. "These McCray cases are doing a real job of moving merchandise. We are especially pleased with your new island type frozen food cases."

This fine installation includes 129 lineal feet of frozen food and ice cream cases. The McCray Distributor in Louisville provided the complete plan and layout for building and equipment. The McCray cases attract customers from a wide area. Sales-making display and easy-shopping features build steadily increasing volume.

McCray distributors have the equipment and the merchandising tools to do the best job for their customers and to insure the best profit for themselves. Some valuable territories are still open. If you're interested, drop us a line—it never hurts to ask.

65 Years of Leadership in Building Dependable Commercial Refrigerators and Display Cases



McCray Refrigerator Co., Inc., 501 McCray Ct., Kendallville, Ind.

I'm interested in the McCray line. Write me about its availability in my city.

Name _____
Address _____
City _____ Zone _____ State _____

Mail Coupon Today!

McAndrews Co. Named Recold Distributor

LOS ANGELES—R. F. McAndrews Co. recently was named exclusive distributor for Recold air conditioning equipment in the Cincinnati area, according to Hy Jarvis, president of Refrigeration Engineering, Inc. which markets Recold trade name equipment.

R. F. McAndrews was active as a manufacturer's agent for 16 years before going into business for himself three years ago. Offices are located at 707 Union Central building there.

Goodling Opens New Showroom

YORK, Pa.—Goodling Electric Co. recently held a grand opening of its new showroom at 140 W. Market St. here.

WILL SHELVING HELP YOUR SALES?
"Get the E-Z Story"



"E-Z" SHELVING
GIVES PIN-POINT ADJUSTABILITY

"E-Z" BRACKETS & STANDARDS
Provides These Advantages

- (1) Helps solve Uneven Floor Problem. Upper Shelves Adjust Level without shimming.
- (2) Helps Solve Odd Package Sizes. Permits vertical spacing to fraction of inch.
- (3) Provides rugged "back-bone" for many shelving requirements.
- (4) Readily Adapted to Precision Tailored Fixtures.

NO KEYHOLES OR SLOTS
Brackets slide up and down in Standard groove and lock at any point on Standard.

HANDLES ALL NORMAL DISPLAY LOADS
Write For Free Folder

Standard Steel Works, Inc.

DEPT. AC-6, NORTH KANSAS CITY, MO.

Planned Pre-Season Cooling Sales Boosted by 'Professional Proposal'

DAYTON—Planned and consistent sales effort, built around proposals that have a real "professional" look, can boost sales of commercial air conditioners ahead of the traditional selling season, the Airtemp Div. of Chrysler Corp. proved this year.

In a special campaign that started Nov. 1, 1955 and carried through to March 31, 1956 sales of Airtemp commercial air conditioning equipment increased 36% over the comparable period in the previous sales year, reports S. Anderson, Jr., sales manager, commercial air conditioning. Further than that, the proposals that went into prospects' hands can be expected to stimulate sales for months.

Campaign Theme Was 'Prospect and Win'

Theme of the campaign, developed by Anderson and T. E. Muir, merchandise manager for Airtemp commercial air conditioning, was "prospect and win" and the campaign slogan was "Propose to 6 in '56." This was based on statistics which show, say the Airtemp officials, that six proposals will result in at least one commercial unit sale.

Dealers and salesmen participated in a prize campaign in which participants received 200 prize points for every commercial air conditioner proposal made during the campaign. (A copy of each proposal had to be sent to campaign headquarters). Prize points were also awarded for every commercial unit sold.

Prize point checks were mailed to each participants' home. (This was aimed at getting the wife interested in the campaign, Muir pointed out, and thus providing another spur to "get the proposals out"). Points could be exchanged for either merchandise awards or—when enough were accumulated—for all-expense paid vacation trips (16 proposals and 18 commercial unit sales represented enough points to win a 7-day, expense-paid trip for two to Nassau).

The proposal form for use by dealers and salesmen in the campaign was prepared by the Airtemp headquarters office, and consisted of a number of 8½ by 11-in. sheets, punched for a three-ring binder, on which a lot of the information necessary to a complete proposal was already printed, making it easy for the salesman to fill in the details for a specific proposal.

Proposals Offered Professional Touch

The "professional" appearance of the proposal form was enhanced by a handsome first or cover sheet, which identified who the proposal was for, and the unit that it would cover.

Other parts of the proposal included an "agreement" sheet which, in addition to the essentials of a buyer-seller agreement, incorporates such information as data on the spaces to be air conditioned (floor space, people, watts light, other sources of load), and a performance guarantee covering summer duty and winter duty.

Also, an "installation work"

sheet, which spells out the responsibility as between seller and buyer for specific aspects of installation as indicated by notations on a printed schedule.

Another sheet covered "equipment furnished," "equipment location," "warranty and service," "workmanship," and "general conditions." A final sheet is devoted entirely to the formal purchase agreement.

Dealers Proved to Selves Sales Not Just April 1 To August 1

The fundamental idea of the campaign was to have dealers prove to themselves that selling air conditioning need not be an April to Aug. 1 business.

But both Anderson and Muir think that the campaign may have done even more good if it demonstrated to dealers and their salesmen the importance of working out a proposal.

"I think about the best thing that could happen to the air conditioning industry would be for the word 'bid' to be dropped."

'Bid' Sets Prospect Thinking on Price

"The word 'bid' immediately sets the prospect to thinking that he should probably be buying air conditioning strictly on the basis of a price bid.

"On a recent call on a prospect which I made with a retail dealer," Anderson relates, "the prospect had a bid—lower than ours—from a competitor. This bid was scribbled on the back of a piece of wrapping paper.

"I asked the man 'would you invest that kind of money in

FRONT AND REVERSE sides of Airtemp's proposal form, an 8½ by 11-in. sheet punched for a three-ring binder.

merchandise for your store on the basis of the proposals and sales that flimsy a proposition' and he admitted that he wouldn't. He then became very interested." Anderson said that an analysis of the proposals and sales made in the campaign revealed a definite upsurge of interest among industrial plants in air conditioning.

SO HALSTEAD & MITCHELL ENGINEERS SAID:

"LET'S INCREASE FINNED SURFACE HEAT TRANSFER"

Announcing **"TURBU-FLO"** finned surface

Increase turbulence of air flowing over a surface and heat transfer from that surface is increased. Develop a pattern on the surface which will build turbulence to a maximum within the allowable pressure drop limits... there you have the latest contribution from Halstead and Mitchell engineers... the new, exclusive "TURBU-FLO" finned surface!

"Turbu-Flo" assures you of extra-safe ratings for your manufactured equipment, because added heat transfer provides an unusual margin of added capacity.

"Turbu-Flo" is manufactured by ultra-modern equipment in our giant Zelenople plant to the exacting quality standards that have made Halstead and Mitchell products distinctive in the air-conditioning and refrigeration industry.

"Turbu-Flo" finned surface is immediately available to meet your every need.

Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

TELL US YOUR NEEDS...
AND ASK FOR BULLETIN DE-200

HM
Halstead & Mitchell



REMOTE
AIR-COOLED
CONDENSERS



BLAST HEATING
AND
COOLING COILS



SPECIAL FINNED
EVAPORATORS
AND
CONDENSERS FOR
AIR-CONDITIONING



SPECIAL FINNED
COILS FOR
REFRIGERATION
FIXTURES

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

ufactures wooden nickels for promotional purposes. Even in lots of 1,000 they now cost 6¢ each.

Breathless Announcement

'Tis difficult to maintain a deadpan expression while passing on the following news from the academic world:

Six professors in Michigan colleges and universities are recipients of Guggenheim Foundation Fellowships to finance further research and study in their respective fields. Those professors and their assignments include:

Dr. John Arthos for "studies of the idea of the sublime relation to the criticism of poetry."

Dr. Evaruste Moise for "studies of classical problems in the topology of higher dimensional Euclidean manifolds."

Dr. Christian Scriber Bondestedt, Jr., for "studies in the field of reactions of carbon-carbon unsaturation."

Dr. Jacob Schmookler for "studies of the socio-economic roots of inventive activity in the American shoe industry."

Our George Hanning has this advice for Dr. Schmookler: "Don't step on my blue suede shoes."

Honi Soit Oui

Mal Y Pense

"A. Pryor," (columnist for the *Grosse Pointe* (Mich.) *News*) is the pseudonym of a social leader in that wealthy and sometimes stuffy Detroit suburb.

Most of the time she "columns" about gardening, horse

shows, debutante parties, who wore what where, and the strange behaviour patterns of upstairs maids, downstairs cooks, and chauffeurs. You could have knocked over a Grosse Pointer with a bond-coupon when he read this item in her April 26 epistle for the *Grosse Pointe News*:

"For those of you who have never seen a copy of *Who's Who*, it is a listing of important people and their accomplishments . . . all of which has to do with this true tale. A Dr. McThing was being given a farewell dinner by some ladies' organization. The after-dinner speaker was a social dowager who did a magnificent job of eulogizing the Doctor and his various civic activities.

"All went well as Madame droned on in her honeyed voice . . . until she said: 'Why, Dr. McThing's *Who's Who* is eight and a half inches long!'

"There were, of course, many

people present who had never even HEARD of the book, so naturally didn't know that this measurement of print covered his good doings. These wondering folks sort of stole glances at each other, and a slight murmuring went through the audience. But this did not penetrate our heroine. She added brightly:

"I KNOW . . . I measured it myself!"

Bob Hood's Philosophy

"Unleashing the full creative power of people," is responsible, in large part, for the Ansul Chemical Co.'s 40% increase in profits on a sales increase of only 3%, according to a recent publication issued by the Chamber of Commerce of the United States.

Said publication is a case study of Ansul's effective employee and community relations program—a program that de-

rives its motivation from the company's unique philosophy called "participative-management."

As Robert Hood, Ansul's president, describes it, participative management is "a way of managing a business enterprise aimed at unleashing the full creative power of people."

Hood feels his concept of management is more than a phrase. "It is an important goal for us," he says, "because, as most businessmen know, people normally use only a portion of their potential ability and energy in performing their work. We want to motivate our people to draw upon more of their latent capacity."

Hood has found that the participation process does two things:

1. Benefits the company through improved performance.
2. Benefits the individual employee through developing his abilities and helping him meet his personal goals.

Ansul employs 515 persons; has three major product lines: refrigeration, fire equipment, industrial chemicals.

The 24-page case study, well illustrated and in two colors, reviews those employee and community relations practices and procedures which have worked so successfully in building increased loyalty, cooperation, and productivity as well as in developing community confidence and respect for Ansul.

The publication is available, at 50 cents per copy, from the Chamber of Commerce of the United States, 1615 H St., N.W., Washington 6, D. C.

Quotes from the case study: "People, not products, are the real competitive difference between companies. Give us the right people and they'll come up with the right products."

"Our experience indicated that the more people participated, the more they would develop. People at all levels were given the opportunity to contribute their thinking to policy matters that affected them. And consequently their sense of belonging and identity was aroused. The fund of human energy that vitalizes our company was increased."

"Management suspected that one important quality which a foreman should have was often overlooked. How well accepted was he by those he worked with . . . his fellow foremen and particularly his subordinates? It was not a popularity contest . . . after weighing all the data . . . management names two new foremen."

FOGEL

Two Originals . . . Pioneered by FOGEL

"ANGLE-VISION"

FROZEN FOOD AND ICE CREAM MERCHANDISER

1. Replace useless wooden counters
2. Boost impulse sales with display
3. Turns storage area into profits
4. Stores more in less floor space
5. Full length reflecting mirror gives angle visibility
6. Fluorescent lighted interior makes attractive display
7. Formica top counter can be used to hold scale, slicer or cash register
8. Five Models — two sizes



MODEL 96 UP

AND THE

"VEGMART"

OPEN DISPLAY REFRIGERATOR

WITH EXCLUSIVE DOUBLE AND TRIPLE DECK REFRIGERATION



1. Huge Capacity
2. Complete produce department
3. Eliminates waste
4. Saves labor and time
5. Saves floor space
6. Increases sales
7. Adaptable for dairy and delicatessen display
8. Large, fresh displays
9. Extra storage bins
10. Automatic Moistener

2 OV. 8 IN. CONTINUOUS LINE



GET COMPLETE INFORMATION ON ABOVE MODELS
DON'T DELAY! WRITE TODAY

FOGEL REFRIGERATOR CO.

Manufacturers of REFRIGERATORS, DISPLAY CASES and FREEZERS Since 1899

5400 EADOM ST., PHILADELPHIA 37, PA. ★ PHONE JEFFERSON 5-8300, CABLE "FOREFCO"

SUPER-FLO FILTER-DRIER



MOLDED REMCAL DRYING FIBERGLAS DEPTH FILTERING

Check Super-Flo's amazing low price, for both original equipment and replacement, against ordinary driers which do not have Super-Flo molded drying elements, massive fiberglass depth filters and spun-end copper shells. Available to the trade through wholesalers everywhere.

REMCO INCORPORATED
ZELIENOPLE, PA.

Mr. A. D. Nour, President, Nour Refrigeration Co.

Daytona Beach, Fla., REPORTS . . .

“Even Medium Size Dealers Can Cash-in on Carload Profits with Westinghouse Waterless Air Conditioners!”



NEEDS NO WATER

New Westinghouse Deliver "More



MARCH 15TH

Westinghouse
Air Conditioned
For Your Comfort



MARCH 16TH



Sold and Installed in 24 Hours!

Here's Tony Nour in action. Like many other progressive Westinghouse Dealers across the nation he's discovered that waterless units require a minimum of selling effort!

5 p.m. Thursday, March 15—Mr. and Mrs. R. P. Hammons get the facts and figures from Mr. Nour . . . convinced, they place their order!

5 p.m. Friday, March 16—Mr. Nour inspects the finished installation at the Hammons' home at 1185 No. Halifax Avenue, Daytona Beach. Thanks to Mr. Nour and Westinghouse the Hammons can look forward to years of trouble-free air-conditioned comfort.

WATCH WESTINGHOUSE!
WHERE **BIG** THINGS ARE HAPPENING FOR YOU

Air Conditioners Cooling Per Dollar!"

Read what Mr. Nour has to say:

"Personal comparison convinces us that Westinghouse units give more value per dollar than any other quality air conditioner on the market. Performance-wise they're simply unbeatable! Easy dealer financing and fast turnover, we feel, make carload economy practical for any dealer. What's more, our sales records prove this to be true!"

Look at these Westinghouse "bonus" features!

- **Low Cost Comfort**—your customers will get "more cooling per dollar" . . . complete home air conditioning at the lowest price in Westinghouse history!
- **Provides Year-Round Air Conditioning**—new waterless models link up easily with forced warm air heating systems . . . use existing duct-work for additional economy!
- **Uses No Water**—needs no plumbing, no expensive water tower installations . . . there's no water disposal problem!
- **Fully Rated**—delivers up to 20% more cooling capacity per unit . . . plenty of reserve power—for every room—during peak heat periods!
- **Easy Installation Indoors or Out**—doesn't waste valuable living space . . . installs in basement, utility room, garage or yard!
- **A Size For Every Need**—available in 2, 3, and 5 hp sizes!

Westinghouse Dealers get the "best deal"!

Any dealer regardless of size can profit with Westinghouse! You're backed with powerful national advertising . . . in newspapers, consumer magazines, on network radio and TV.

More important! There are even special allowances for local dealer advertising—*where it counts most for you!*

**Here's your opportunity to share in
PROFITS BY THE CARLOAD! Your local
Westinghouse Distributor will tell you how!**

CALL OR WIRE TODAY! DISTRIBUTOR LIST ON NEXT PAGE . .



Call or wire your nearest
Westinghouse Distributor collect

ALABAMA

BIRMINGHAM
Flint Refrigeration Co.
127 S. 20th Street

MOBILE
Associated Equipment Co.
717 St. Joseph Street

ARIZONA

PHOENIX
Fresco Distributing Co.
21 East Durango Street

ARKANSAS

LITTLE ROCK
Fagan Air Conditioning Co., Inc.
900 Center Street

CALIFORNIA

BAKERSFIELD
The Isotherm Co.
405 Williams St.

FRESNO
Air Conditioning Sales, Inc.
2208 Tuolumne Street

INDIO

Frank Cavanaugh's Electrical Service
45-248 Jackson Street

LOS ANGELES 17
Comfort Distributors Corp.
1709 W. Eighth St., Rm. 1125

COLORADO

DENVER 4
T. C. Alexander
1100-06 Champa Street

CONNECTICUT

BRIDGEPORT 8
Air Conditioning Corp. of Connecticut
41 California Street

FLORIDA

MIAMI
Westinghouse Electric Supply Co.
3400 N. W. 31st Street

TAMPA 1
Tampa Armature Works, Inc.
401 South Morgan Street

GEORGIA

ATLANTA
Raymond Distributing Co.
156 Rogers Street, N. E.

MACON

Air-Rite Products Co.
452 First Street

ILLINOIS

CHICAGO 44
Mid-States Air Cond. Equip., Inc.
4640 West Washington Blvd.

PEORIA 2

O'Brien Distributing Co.
100 Walnut Street

ROCKFORD

D and F Supply Co.
604 South Main Street

INDIANA

EVANSVILLE
Evansville Electric Service, Inc.
1025 Reis Ave.

FORT WAYNE

Westinghouse Electric Supply Co.
New U.S. 30 & Meyer Road

INDIANA (Cont.)

GARY
G. W. Berkheimer, Inc.
1040 Washington St.

INDIANAPOLIS
G. W. Berkheimer Co.
610 South New Jersey Street

IOWA

DAVENPORT
Gerke-Robinson Co.
210-212 E. River St.

DES MOINES

Heating Wholesalers Co.
107 S. W. Second Avenue

KANSAS

GREAT BEND
Wedell Electric Supply Co., Inc.
1209 Williams Street

WICHITA

Hill Electric Air Conditioning, Inc.
307 Laura Street

KENTUCKY

LOUISVILLE 4
Stewart Distributing Co.
1019 East Broadway

LOUISIANA

NEW ORLEANS 12
Equitable Equipment Co., Inc.
410 Camp Street

SHREVEPORT

The Dykes Co., Inc.
1012 Market Street

MARYLAND

BALTIMORE 15
Lloyd E. Mitchell, Inc.
4650 Reisterstown Road

MASSACHUSETTS

BOSTON 10
Carlson Equipment Co.
10 High Street

MICHIGAN

DETROIT 3
Temp-Matic Inc.
12320 Hamilton Avenue

GRAND RAPIDS

Westinghouse Electric Supply Co.
511 Monroe St., N. W.

MINNESOTA

MINNEAPOLIS 6
Thomas Air Conditioning Inc.
2428 Riverside Avenue

MISSISSIPPI

JACKSON
South Central Htg. & Pllg. Co.
2666 N. Mill St.

MISSOURI

KANSAS CITY 8
Natkin & Co.
1924 Oak Street

ST. LOUIS

Westinghouse Electric Supply Co.
5049 Fyler Avenue

SPRINGFIELD

Paul Mueller Co.
1616 W. Phelan

NEBRASKA

OMAHA 5
Natkin & Co.
4001 Leavenworth Street

NEVADA

RENO
Saviers Electrical Products Corp.
640 N. Sierra St., P. O. Box 531

NEW JERSEY

CAMDEN
Borstein Electric Co.
415 Broadway

IRVINGTON

Geiger Air Cond. & Refrig. Co., Inc.
1361 Springfield Ave.

NEW YORK

BUFFALO 2
Buffalo Electric Co., Inc.
75 W. Mohawk Street

JAMESTOWN

Sans Corporation
132 Blackstone Ave.

NEW YORK 10

Times Appliance Co., Inc.
353 Fourth Avenue

ROCHESTER 9

Vanas & Gottmeier, Inc.
401 Webster Avenue

SCHENECTADY

Jon Tree Sales & Supply Co.
412 Warren St.

NORTH CAROLINA

CHARLOTTE
Air Conditioning Equipment Co.
P. O. Box 4095

WINSTON-SALEM

Wall-Turner Heating & Air Cond. Co.
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OHIO

CINCINNATI 2
The Kuepfer Co.
1000 Gilbert Avenue

CLEVELAND 15

Unit Air Conditioners, Inc.
2336 Prospect Avenue

COLUMBUS 2

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2572 High Street

TOLEDO 4

Air Conditioning Distributors, Inc.
4322 Garrison Rd.
PO Box 123

STATION H.

YOUNGSTOWN 3
Carlson Electric Co.
121 E. Boardman Street

OKLAHOMA

OKLAHOMA CITY
Air Engineering Inc.
26 N. E. 26th St.

PENNSYLVANIA

ERIE
Lakes Engineering Co.
1316 G. Daniel Baldwin Bldg.

PHILADELPHIA 31

Raymond Rosen & Co., Inc.
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Aircon & Heating Supply Co., Inc.
3811 Penn Avenue

WILKES-BARRE
AirCo Distributing Co.
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SOUTH CAROLINA

COLUMBIA
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CHATTANOOGA
Tennessee Engineering Co.
Division of Lenson Co., Inc.
1516 E. Main Street

KNOXVILLE

Indoor Comfort Distributors Co.
520 Van Street

MEMPHIS 3

Associated Southern Industries
1161 Union Avenue

TEXAS

DALLAS
Trans-State Supply Co.
425 South Field

EL PASO

Fred A. Lankford
2601 E. Missouri St.

HOUSTON

Star Steel Supply Co.
9411 Alameda

LUBBOCK

Homer G. Maxey & Co.
1611 Fourth Street

SAN ANGELO

Climate Engineering Co.
2320 Sherwood Way

SAN ANTONIO

Byrne, Inc.
1626 E. Houston St.

UTAH

SALT LAKE CITY 1
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WASHINGTON, D.C.

Combustionner Corp.
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WASHINGTON

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Warren Little & Lund
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MILWAUKEE 7
Layton Supply Co.
924 E. Russell Avenue

WATCH WESTINGHOUSE!
WHERE **BIG** THINGS ARE HAPPENING FOR YOU

U.S. Ruling Opens Built-In Year-Round Room Units Heat, Federal Building Cool Phoenix Drive-In Bank Tellers Room Unit Market

WASHINGTON, D. C.—A new retail market for window air conditioners here and elsewhere around the country was opened up by a General Services Administration ruling.

Government workers were notified by GSA Administrator Franklin G. Floete that those employed in non-air-conditioned Federal buildings may purchase air conditioners with their own funds and have them installed by GSA at government expense. There are approximately 30,000 Federal employees here.

Air conditioners may be purchased from any retailer or vendor, according to GSA. A number of Government agencies have employee welfare clubs and GSA noted that Floete's regulation will not bar such groups from buying a large number of air conditioning units from a distributor for delivery to the same Government building or department.

While GSA originally planned to authorize a pool buying operation, with the Government purchasing the air conditioners for installation and resale to Federal workers, the General Accounting Office ruled this could not be done.

Therefore, a GSA spokesman explained, it will be up to the affected Federal employees to buy their own units and arrange with GSA's buildings management division to have them installed.

Last summer Federal workers in a number of agencies requested permission to buy room air conditioners with their own funds—after GSA said it did not have the funds to air condition all Government offices here and in the field. This idea was rejected then, but Floete's ruling now makes it possible.

GSA stated that employees, particularly those in temporary buildings where summer temperatures often steam up 100° or higher, will be encouraged to buy larger air conditioning units than 1/2 or 3/4-ton room-size ones.

After the units are installed, it was explained, GSA will not charge workers for electricity, maintenance, or repairs.

Detroit To Open Fully Air Conditioned Library

DETROIT—A completely air conditioned library containing 8,000 sq. ft. of floor area, to be completed by next January, will become the twenty-eighth full-time branch library here, Ralph A. Ulveling, director of the Detroit Public Library System, announced.

To cost about \$225,000, this will be the largest of the system's 10 branches built in the post-war period.

Connor Names Crowder

DANBURY, Conn. — W. A. Crowder, Seattle, has been named exclusive representative for the Connor Engineering Corp. line of residential ceiling air diffusers for Washington, Oregon, and Idaho.

PHOENIX, Ariz. — Arizona's first complete drive-in banking facility, known as the Motor Branch of the Valley National Bank, has cool cashiers regardless of how the thermometer outside may soar.

Each of the Phoenix drive-in bank's four windows is a separate building cooled by its own room air conditioner. The Amana "Year 'Round" units were installed "through-the-wall" while the Motor Branch here in Phoenix was being constructed.

Each cashier can select any one of six different combinations of cooling, heating, dehumidification, and ventilation on the Year 'Round in his window by adjusting the unit's single glider control. The switching of damper, compressor, and fans is

automatic once the control is set. A "chill-check" heating unit is provided for use during the late evening or early fall chills.

The bank's \$175,000 Motor Branch project, featuring a separate approach lane to each of its four windows, enables customers to make deposits, withdrawals, and cash checks without parking or leaving their cars.

A flow of 240 cars an hour can be handled by each of the windows. Provision also is made for pedestrian "walk-up" service to the windows.

A connecting roof provides shaded area for the customers and their cars. Each of the individually air conditioned windows is equipped with bullet-proof window glass and is built of Norman brick.

Room Air Conditioners



EACH of the four teller's windows, in its own separate building unit, of the Motor Branch of Valley National Bank in Phoenix, Ariz., is air conditioned by its own Amana year-round built-in room unit. Six different combinations of cooling, heating, dehumidification, and ventilation can be individually selected.

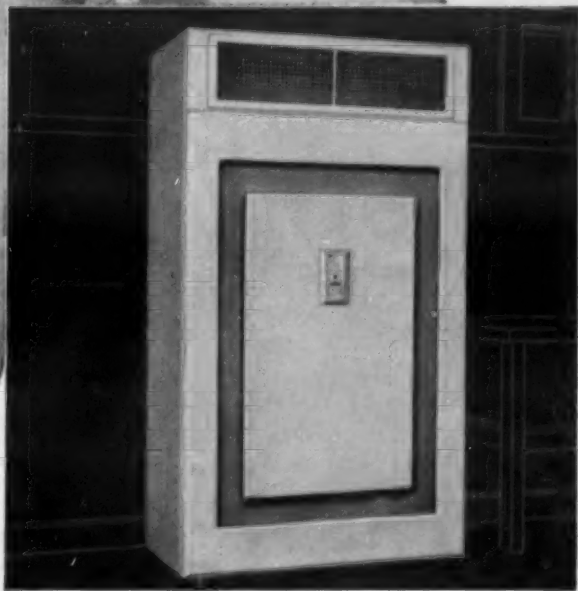


You make more sales with

Gibson

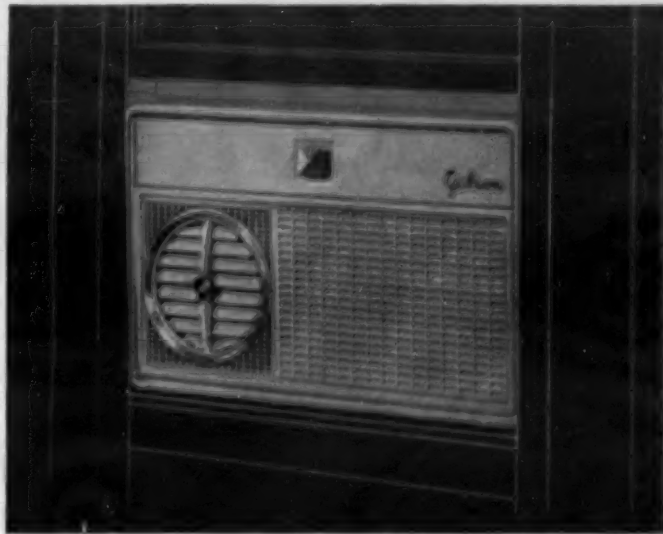
because Gibson gives more to your customers!

means more profit to you!



Here is large capacity air conditioning for businesses, and for homes where central air conditioning is desired. Gibson's extra capacity water-cooled condenser gives maximum efficiency with low water consumption. Adjustable air vents give flexible air distribution, and duct connections are convenient.

Available in 2, 3, 5 and 8 horsepower units, air cooled and water cooled in commercial (shown here) and residential models.



Take this Gibson Custom Air Conditioner, for instance! It has Gibson's new Infinite Control direction louver for no-draft circulation. Push Button Controls, of course, that control both cooling and circulation at either high or low speed. Permanent type electro-static dust magnet filter, and thermostatically controlled cooling. Exclusive Gib-Sun-Air Ozone Lamp freshens the air, removing stale odors.

Gibson window air conditioners are available in 3/4 h.p., 1 h.p. and 2 h.p. Custom models and in lower priced Deluxe models with the same horsepower.

79 years of experience and millions of satisfied customers mean you can always rely on

Gibson

REFRIGERATORS • ROOM AND SELF-CONTAINED AIR CONDITIONERS.
FOOD FREEZERS • ELECTRIC RANGES • BUILT-IN RANGES

Gibson Refrigerator Company
Greenville, Michigan

Please send me all the facts on the profitable Gibson air conditioning line.

Name.....

Firm name.....

Address.....

City.....State.....

Torque Motor Seen Replacing Solenoid

Applies Torque at Zero Speed, Rotates with Less Torque, Stops Without Pounding, High Safety Factor Are Motor's Advantages

ST. LOUIS—Because of its several advantages, the torque motor is gradually replacing the solenoid and other forms of energy conversion in many applications, according to Richard P. Ballou, chief engineer of Howell Electric Motors Co.

Can Be Used To Operate Dampers, Valves

In the air conditioning industry, the torque motor can be used to operate dampers and valves, Ballou told the AIEE conference on application of motors to space heating and cooling equipment held here recently.

"The purpose of the torque motor," he explained, "is to apply torque at zero speed for a

specified period of time, and to rotate with lesser torque. In rare cases a torque motor may never be called on to rotate, and in equally rare cases it may never be stalled, but the fact remains that it is capable of doing both."

This type of motor, Ballou said, is used to open and close certain types of doors, such as elevator doors and store doors controlled with an electronic eye; for positioning and holding work in a machine while some operation such as drilling or milling is being performed, and various other applications, including the above-mentioned operation of dampers and valves.

Such motors are usually custom-built, he pointed out.

"There are applications, such

as the control of small valves, where either a torque motor or a solenoid can be used," Ballou declared. "The selection will depend on many factors, such as size, cost, reliability, and factor of safety."

2 Ways Solenoid Energy Is Dissipated

"The energy of a solenoid is dissipated in two ways: (1) overcoming the resistance of the load (doing work), and (2) pounding the magnet faces. All energy not used as (1) is dissipated as (2)," he explained.

"The pull of a magnet and its energy vary as the square of the voltage. If the solenoid is designed to just operate its load at 80% voltage, it will

dissipate 36% of its energy in pounding at rated voltage and 57% at 10% over voltage," Ballou said.

"Any effort to provide a greater safety factor so as to take care of possible sticking of the mechanism obviously results in excessive pounding of the magnet under normal operating conditions, and if more than a very minimum safety factor is required, the solenoid life may be unsatisfactory."

No Pounding, Safety Factors Explained

"The torque motor, on the other hand, comes to a stop without pounding, and can have a high factor of safety," Ballou emphasized.

"The snap action of the solenoid may also be harmful to the device it operates, and under certain conditions the noise may also be objectionable. There are some applications, such as releasing a motor brake, where the fast action of the solenoid is desirable," he admitted. "However, one pays for this fast action in power drawn from the line."

"Power is the rate of doing work, and the faster the operation is performed, the more power is required to do it, even though the total energy consumption may be the same," Ballou said.

Solenoid Motor May Need 10 Times the Power

"Thus between a solenoid and a torque motor the solenoid may require 10 times the power, or

even more, with attendant increase in size of conductors and control relays, as well as sometimes causing objectionable line voltage fluctuations.

"The solenoid ordinarily moves its load to some predetermined position. The sealing of the solenoid, which is important, is usually provided for by a slight allowance in the final position, or by a spring between the solenoid and its driven member, which increases the load the solenoid must handle without helping the safety factor."

"On the other hand," Ballou explained, "the torque motor always drives to the stop determined by the driven member itself. In the case of a screw-down valve, it will compensate for gasket wear, and no adjustment is required if the valve is inspected or replaced."

"The torque motor is easily reversed, and with simple control it can be stopped to leave a valve, damper, or door in an intermediate position."

Young Supply Opens Branch In Pontiac

DETROIT—Young Supply Co. here, wholesaler of air conditioning, refrigeration, and heating supplies, recently opened a branch store at 424 Orchard Lake Rd., Pontiac, Mich.

Open house was held to celebrate the event which "gives our firm better distribution" of the manufacturers' products handled, the company stated.

IT'S IN THE BAG!



Easy-to-use MICROMET® Plates keep cooling water systems free of scale

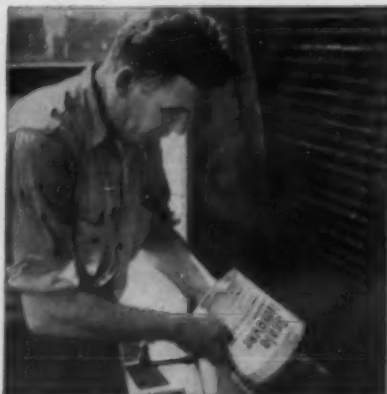
The simplicity of Micromet protection for recirculating cooling water systems is one of its most attractive features. Micromet Plates are placed in a glass mesh feeding bag, and the bag is hung in the water spray or placed in the sump. That's all there is to it, and a single charge will last all season in most systems.

If you already have scale in the system, Calgon® Scale Remover is the easiest and safest way to take care of it. An excellent corrosion inhibitor protects

the metals in the system while in use. In addition, Calgon Scale Remover contains a built-in pH color indicator which shows you exactly how much to use, and indicates when the system is clean.

Algae or organic growths in cooling towers are easily taken care of by Calgon Algaecide. New formula Calgon Algaecide has greater killing power. This means that you can use less Algaecide per treatment.

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See your refrigeration wholesaler for Calgon's Big Three!

CALGON, INC. A SUBSIDIARY OF HAGAN CORPORATION
Hagan Building, Pittsburgh 30, Pa.

For more information about products advertised on this page use Information Center, page 28.

NEW

Marsh Testing Set

... with temperature scales for
Freon-12 and Freon-22

The finest of testing instruments have been made still better. Pictured above are the new models of Marsh pressure and compound testing gauges . . . with two scales in color showing corresponding temperatures of Freon-12 and 22 . . . with greater pressure ranges in both gauges.

In the Compound gauge, the important retard scale has been increased to read from 0 to 80 lbs., and maximum reading is increased to 250 lbs. The range of the pressure gauge has also been increased . . . to 400 lbs.

Their precision bronze-bushed movements give them the remarkable accuracy of 1% of reading. Like their distinguished predecessors, they have the handsome, highly-polished brass cases with sparkling beveled-glass crystals. Threaded rings make it easy to remove the crystal, giving instant access to the Marsh "Recalibrator"—quickest and best way to maintain the high degree of accuracy vital to testing. Gauges are standard with 1/8" N.P.T. male bottom connection with restriction screw in connection. Dial size, 2 1/2".

No servicing kit is complete without this testing set. Write for details or **SEE YOUR JOBBER**

MARSH INSTRUMENT CO. SALES AFFILIATE OF JAS. P. MARSH CORPORATION
Dept. D, Skokie, Ill.

Marsh Instrument & Valve Co. (Canada) Ltd., 9407 103rd St., Edmonton, Alberta

MARSH Refrigeration Instruments

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

'Mark' Continuous Truck Refrigeration System Adds Hold-Over Plates To Maintain Temperature Control as Low as -14° F.

Mechanical Power Train From Engine Crankshaft Pulley Provides Drive

LANSING, Mich.—The new "Mark" system of continuous truck refrigeration announced earlier this year is now available for use with "Kold-Hold" hold-over plates, the Tranter Mfg. Co. announced recently.

When used with the plates, the system weighs only 350 lbs. and provides temperature control as low as -14° F., the Kold-Hold Div. said.

Other features of the system are fast pulldown, ease of installation, and simplicity of operation and maintenance, the manufacturer claims.

2 Things Reduce Weight Factor

Design of the condenser and elimination of auxiliary engines or batteries for power have cut the weight factor to the minimum. The high capacity of the condenser has been achieved by making use of the entire surface of the cooling coil.

The Mark system is driven by a simple, mechanical power train to save the weight of auxiliary equipment. Power is derived from the engine crankshaft pulley through an electric clutch, then transmitted to the condenser through a flexible shaft.

Drive Assembly Weighs 64 Lbs.

Total weight of the entire drive assembly is 64 lbs. Stand-by power is provided by an electric motor that drives the condenser without operating the truck engine.

The fan and shrouding design of the Mark system "Ram-Jet" condenser utilizes the entire coil surface for dissipation of heat as the fan is mounted with blades at right angles to the coil at its forward end. Total weight of the condensing unit is 286 lbs.

The entire assembly is skirt-mounted directly on the vehicle chassis. The condenser fan is driven by a high-speed generator that requires no battery.

The Kold-Hold plates are available in a wide range of sizes and with various eutectic

Worthington Names Fraser, Wentworth

HARRISON, N. J.—A. William Fraser and Clarence S. Wentworth have been appointed commercial vice presidents of Worthington Corp. by the board of directors, Edwin J. Schwanhauser, president, announced recently.

Fraser, who has been midwest regional sales manager of Worthington since 1951, is in charge of the district sales offices at Chicago, Denver, Kansas City, St. Louis, and Minneapolis. His headquarters are at Chicago.

Wentworth is sales manager of the central region, with headquarters at Cleveland and responsibility for the district sales offices at Buffalo, Cincinnati, Cleveland, Detroit, and Pittsburgh.

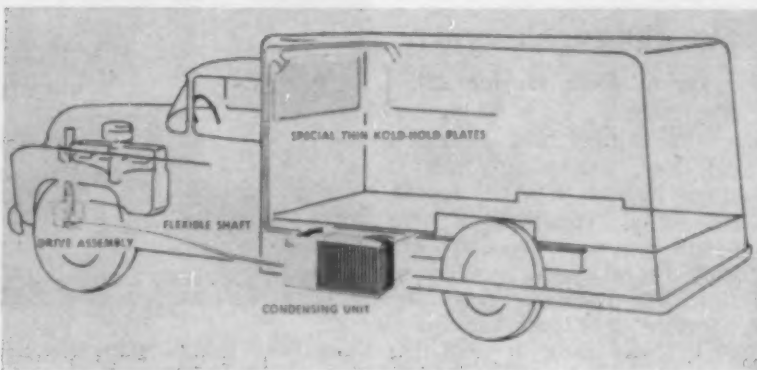


DIAGRAM shows how power is derived from the engine crankshaft pulley through an electric clutch, then transmitted through a flexible shaft to the condensing unit. Thin "Kold-Hold" hold-over plates made by Tranter Mfg. Co., Lansing, Mich., are set in the truck body.

solutions to meet all truck-refrigeration requirements, the manufacturer said.

Designed with rounded contours, they employ metallic fins connecting interior tubing to help distribute and increase refrigerative capacity. Another outstanding feature is perimeter freezing, which directs

Transport Refrigeration

pressure of expansion from freezing to the center of the plate and away from the seams. Kold-Hold plates take up little usable space and can be mounted anywhere in the truck. They may be used in various combinations to provide any degree of cooling for any period of time when combined with the Mark continuous system, the manufacturer said.

LIQUID EYE[®] POSITIVE SEALING INDICATORS

FROM THE SMALLEST TO THE BIGGEST



There is no job too large or too small for LIQUID EYE. There is a unit available for the smallest air conditioner or refrigerator to the largest size Commercial installation in operation today.

Here's why almost 1,000,000 Liquid Eye Indicators have been sold to date. Spring loaded gaskets for positive sealing • unrestricted full-line flow • pyrex glass, double sealed at sides and ends, provides instant check of refrigerant condition • guaranteed to 500 psi. • precision made.

Sold by leading wholesalers everywhere. Send today for Catalog D-55 containing the complete Liquid Eye line.

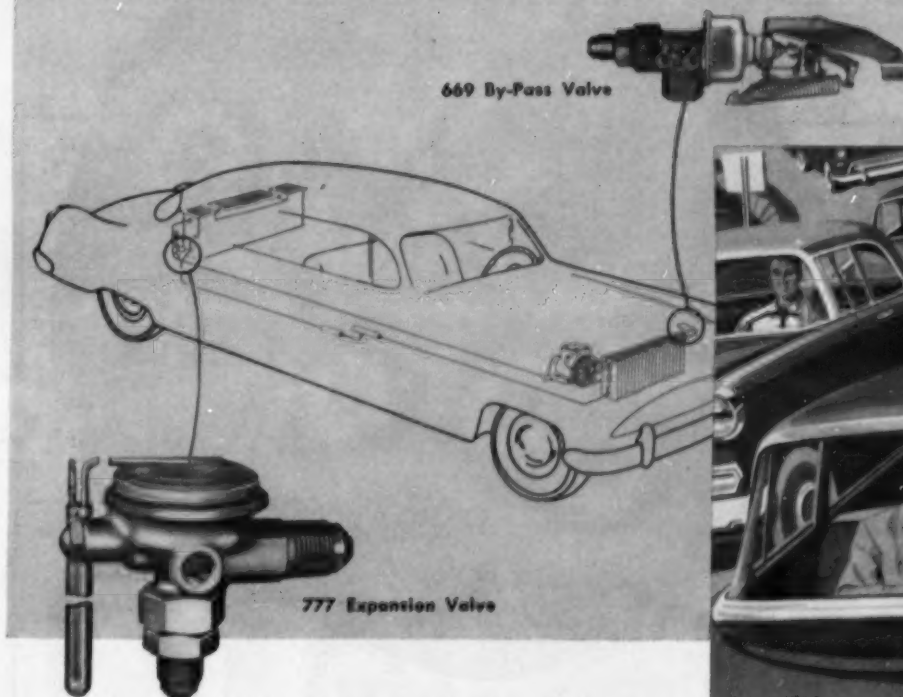


Allin MANUFACTURING COMPANY

1153 West Grand Ave.
Chicago, 22, Illinois

Almost 1,000,000 Liquid Eyes Sold to Date!

DETROIT CONTROLS' BY-PASS VALVE assures even cooling at All Speeds on Automobile Air Conditioning



Gives Your Customers Cool, Uniform Comfort.

One of the biggest problems in automobile air conditioning is to adjust the system capacity to the car's varying speeds . . . to eliminate over-cooling at high speeds and assure sufficient cooling at low speeds.

The economical, efficient way to solve this problem is to use Detroit Controls' 669 By-Pass Valve as a temperature and capacity control.

With the 669 Valve, the by-pass pressure may be set to eliminate icing of the evaporator. In this way, the valve maintains proper evaporator conditions at all speeds.

Another feature of the 669 Valve is the Passenger Comfort Control. This is an actuator, on the valve, which is controlled from the instrument panel. This allows the driver to regulate how much air conditioning he will receive, and is especially desirable in an automobile that travels in different climates.

For use with the 669 By-Pass Valve, Detroit Controls has the 777 Expansion Valve, a simple, rugged liquid charged valve that assures the proper flow of refrigerant.

Both the 669 By-Pass Valve and the 777 Expansion Valve offer years of trouble-free operation.

For complete information on all Detroit controls for Automobile Air Conditioning and how they will help you, write for Bulletin 259-A.

DETROIT CONTROLS CORPORATION
5900 TRUMBULL AVE. • DETROIT 8, MICHIGAN
Division of AMERICAN-Standard



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AUTOMATIC CONTROLS for REFRIGERATION

AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

For more information about products advertised on this page use Information Center, page 28.

Contractor Finds Solution To Tough Job

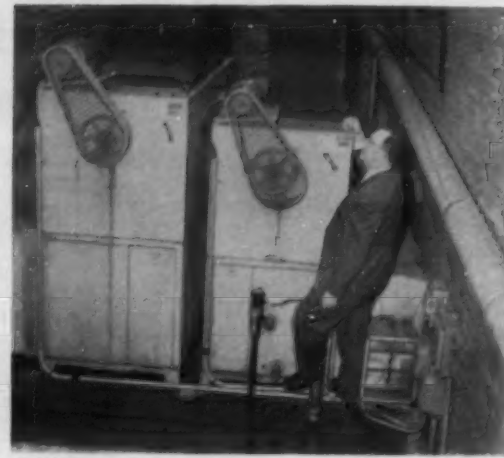
95-Ft. Throw from Air Handling Outlet Grilles
Satisfactorily Air Conditions Big Banquet Room

By C. Dale Mericle

RICHMOND, Va.—Modernizing the stately old Jefferson hotel here, a seemingly almost endless project, has the installation of air conditioning high on the priority list, but it's hardly the simplest assignment Ralph W. Lampie, Frigidaire contractor, has ever tackled.

Built 'way back in 1895, the Jefferson covers most of a large city block. Room sizes, both public and private, are of generous proportions, and so are ceiling heights. This can pose some problems.

Most important factor facing the air conditioning contractor, however, is that he cannot disturb the distinguished architec-



AIR units for Empire room and ballroom of hotel were located outdoors between these two sections of buildings by contractor Ralph Lampie. Abandoned dumb waiter shaft, remembered by hotel engineer, simplified running lines to condensing units in basement.

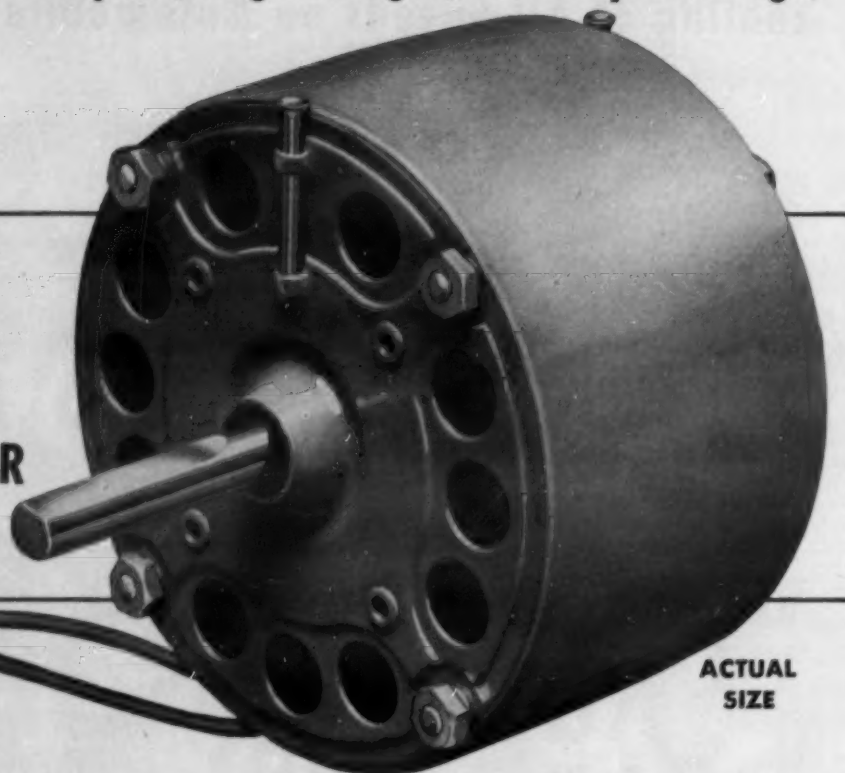


PROBLEM of air conditioning Empire room of Jefferson hotel in Richmond, Va. was to avoid interference with architecture. Supply grilles (arrows) were installed at one end of 95-ft. long room near ceiling. Return air is picked up at doorway (lower left).

MORE HORSEPOWER...

in an Economical, Compact, Lightweight, Quality Package

NEW
Redmond
AL-4 MICROMOTOR



ACTUAL
SIZE

Designed for a Wide Variety of Applications ...
or can be Tailor-Made for Specific Requirements

Here is a motor designed and styled to meet the modern demands for motors that are smaller and lighter, and yet have increased output. It is ideal for heating, ventilating, air conditioning or refrigeration equipment, for appliance applications, and for business and vending machines, pumps, tape recorders, and dozens of other applications.

The basic AL-4 is a 4-pole motor, 1550 r.p.m., 115 volts, 60 cycles, available in odd voltages and frequencies. The normal horsepower range is 1/250th to 1/15th. It incorporates two famous Redmond design features that have never before been available in a small diameter motor:

1. The patented Redmond Tri-Flux® design that greatly increases starting and running torque and improves efficiency over conventional small diameter motors;
2. The Uni-Cast® construction that gives a rigid, lightweight motor that can be manufactured to extremely close tolerances.

Because with Uni-Cast construction the stator core frame is precision die cast in one piece, the registers are machined concentric to the bore to extremely close tolerances. The exact bearing alignment and uniformity of air gap achieved with this precision manufacturing result in a motor that is whisper-quiet in operation and can be depended on to give years of trouble-free service.

Casting the stator core frame in one piece not only makes the motor most rigid, but it is light in weight, as a very durable and lightweight metal is used.

This modern motor can save money on a host of applications. If you are looking for a motor in volume quantities, send for the literature described below.

The Standard of Dependability

Redmond
COMPANY, INC.
OWOSSO, MICHIGAN



THE BIG NAME IN SMALL MOTORS



SEND FOR COMPLETE PERFORMANCE DATA

For the complete story on the new AL-4 motor—dimensions, performance, operational data, and suggested applications—write for the "AL-4 Bulletin."

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The Saturday Evening
POST

No Ductwork Permitted Anywhere In Room

Size of the room in itself presented no problem, except that the hotel management would not permit Lampie to run any ducts anywhere in the room. And the highly decorated ceilings couldn't be touched.

Lampie's solution was to install two 24 by 48-in. outlet grilles at one end of the room on each side near the ceiling, and design the air-handling system for a 95-ft. throw.

"Even I had my doubts that this would be completely satisfactory," Lampie confesses, "but it has worked out quite okay."

Doorway Serves as Return Air Grille

Return air is picked up through a doorway at the same
(Concluded on next page)



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MEANS DURABILITY

THE ORIGINAL, PATENTED CROSS-FIN COIL

The refrigeration coil that changed an industry stands today unchallenged for performance, user satisfaction and lasting durability. Made from the finest materials by skilled craftsmen under exacting standards, every Larkin Coil features imbedded fin-to-tube contact, swaged connection, silfos welded construction, and staggered tubing. Write for complete details.

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• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS
319 MEMORIAL DR., S.E. • ATLANTA, GA.

Tough Job Solved-- Amana Ups Dittrich In Applications Of Central Systems

(Concluded from preceding page)

end of the room where the outlet grilles are located. For this purpose the entire wood panel of the door was removed and replaced with a metal grille.

The Kennard air-handling unit which serves the Empire room, and also a small meeting room, is installed outdoors close to the room. There was just enough space between the main building, in which the Empire room is located, and the adjoining structure housing the ballroom-exhibition hall of the hotel for this air-handling unit and another Kennard unit (30 tons) which Lampie put in to air condition the ballroom.

Ducts Run Across Balcony Ceiling

Running the ductwork for the ballroom job, fortunately, didn't present so much of a problem, Lampie says. A duct was extended full width of the ballroom at the ceiling in the balcony, several discharge grilles being provided in the duct. Each grille has considerable throw, but not the 95 ft. required in the Empire room.

Lampie did get one lucky break on these two jobs. The problem of running refrigerant lines from the two air-handling units to Frigidaire compressors in the basement machine room of the hotel at first looked like it would require a great deal of work cutting holes through thick brick walls.

Then J. B. Bloodworth, Sr., the hotel's chief engineer, recalled that there should be a long-abandoned dumb waiter shaft just about at the right place, bricked over, of course. Turned out that the shaft was just where Bloodworth thought it should be, so the lines were simply run through the shaft.

200-Ton Cooling Tower Serves All Systems

These two systems are tied into a 200-ton Marley cooling tower which serves other air conditioning systems in the hotel such as those for the Press Club of Virginia, the Rotunda Club, and the Colony club.

Space for these clubs has been obtained chiefly by extensive remodeling of what was otherwise wasted storage area in the nether regions of the hotel. The hotel force under Bloodworth's direction has converted the most dingy areas into ultra-modern club quarters. Preserving the old "architecture" was the last thing anybody wanted in these sections which simplified air conditioning to some extent.

MOTOR BASE ADAPTERS Sell Many Other Items

Keep them in stock. Servicemen will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.

SIZES FOR 1/2 to 3 H.P. Inclusive
Engineering Research Associates, Inc.
3475 East Nine-Mile Road
Hazel Park, Michigan

AMANA, Iowa—Elmer J. Dittrich has been appointed air application engineer for Amana Refrigeration, Inc., it was announced here recently. Dittrich will specialize on Amana's new central air conditioning systems.



E. J. Dittrich

Since he joined Amana in 1937, Dittrich has been active in installation, service, and engineering of refrigeration products. Initially he was engaged in the installation of frozen food locker plants.

For the past four years, he has been refrigeration process engineer.

Talk on Engineers' Role To Highlight Wichita ASRE May 15 Meeting

WICHITA, Kan.—D. J. Mull, engineering vice president for The O. A. Sutton Corp., was elected chairman of the Wichita Section, American Society of Refrigerating Engineers, at the group's organizational meeting held recently at the Hotel Lasen here.

Other officers of the newly-formed section are A. L. Blossom, first vice chairman; E. J. Borowiec, second vice chairman; Bill Rundell, secretary; R. G. Cordes, treasurer; and M. A. Turnival, assistant secretary.

Highlighting the business activity of the meeting, in addition to the selection of officers, was the preparation of a "petition for charter."

One hundred and two members of Wichita's refrigeration



ACTIVE in the formation of the Wichita Section American Society of Refrigerating Engineers were: Bill Rundell, secretary; D. J. Mull, chairman; R. G. Cordes, treasurer; E. J. Borowiec, second vice chairman; A. L. Blossom, first vice chairman; and M. A. Turnival, assistant secretary.

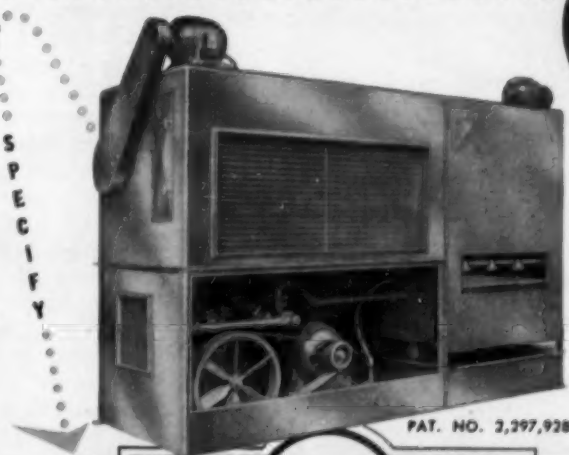
industry and many guests from the Kansas City Section and from ASRE national headquarters attended the meeting. They heard C. W. Nessell, industry consultant for Minneapolis-Honeywell Regulator Co., speak on "Practical Aspects of Residential Air Conditioning."

The next meeting of the Wichita Section will be held on Tuesday, May 15, at Innes Tea Room. Herman Spoehrer, vice president of Sporlan Valve Co., will discuss "Engineers' Re-

sponsibility to Our Industry." The meeting will begin with a social hour at 6 p.m., followed by dinner at 7 and Spoehrer's talk at 8.

Many new applicants for ASRE membership are expected to attend the May 15 meeting. All who submit applications at the meeting, together with those who signed the "petition for charter" at the organizational meeting, will become charter members of the Wichita ASRE Section.

If unusual loads or space requirements are your problem...



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SELF CONTAINED UNITS

Governair, originators of completely packaged air conditioners, offers you the installation advantage of compact, all-in-one design combined with manufacturing flexibility that provides the answer to unusual space and load problems.

Governair's ability to please is further reflected in finer engineering and longer life construction. Write for full details on Governair SCU's!

READY TO OPERATE WITH SIMPLE ELECTRICAL, WATER AND DUCT CONNECTIONS

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AIR CONDITIONERS



EVAPORATIVE CONDENSERS



COOLING TOWERS



UNIT COOLERS



BLAST COILS FOR HEATING AND COOLING

**Jimmy
Hatlo**



20

Detroit Suburb Requires Water Use Fee Va. Air Conditions Art Museum On Conditioning, Refrigeration Systems To Preserve Items, Cool Visitors

GROSSE-POINTE FARMS, Mich.—An ordinance covering installation, operation, and inspection, of air conditioning and refrigeration equipment, and requiring conversion of all air conditioning units in accordance with its provisions, was adopted by City Council here recently.

Systems Must Be Licensed, Inspected

Ordinance 119, a five-page document, stipulates that all air conditioning and refrigeration systems be licensed and inspected. It also provides penalties for violations of the regulation.

The terms "air conditioning system" and "refrigeration system" include any combination of equipment, whether compressor or other type, by which heat is removed from air and from which the accumulated or effluent heat is wholly or partially removed by use of water, the ordinance states.

Under the new law no person shall install, maintain, or operate any equipment for air conditioning or refrigeration which requires a supply of water from the system of the City of Grosse Pointe Farms, without first having procured a written permit from the city clerk.

Fees shall be paid at the time of application for a permit, and will cover one inspection of the installation. The fee for a plumbing permit is \$5.

Fees Listed

Fees for air conditioning and refrigeration systems 1 to 5-ton capacity are, each unit \$5; 6 to 60-ton capacity, \$10 each. Over 50 tons capacity, \$20 each.

Any person who violates the provisions of this ordinance and fails to comply with notifications to correct such violation and to pay the penalties assessed, or who repeatedly violates such provisions, may be deemed guilty of a misdemeanor and

upon conviction be subject to a fine not exceeding \$100 or imprisonment for not exceeding 90 days, or both.

Modifications Must Be Completed by May 1, 1957

Existing installations not conforming to provisions of the ordinance shall be modified upon application to conform to the regulations by May 1, 1957. These non-conforming units may continue to be operated until May 1, 1957, if within 60 days of the effective date of this ordinance application for a temporary non-conforming permit is made to the city clerk.

The ordinance will take effect 20 days after its enactment or upon its publication date, whichever is later.

RICHMOND, Va.—Air conditioning may do much to revitalize the lagging interest nationally in cultural subjects stated Leslie Cheek, director of the Virginia Museum of Fine Arts here.

"Air conditioning assists in the preservation of valuable works of art," he said. "It effectively overcomes hot, humid indoor climates that breed destructive mildews and insects, and filters harmful dust and greasy smoke from the air being circulated to areas where priceless items are on exhibit."

"It simplifies the problem of keeping the entire premises clean, and, of course, provides comfort cooling for visitors," he explained.

Worthington central refriger-

ating equipment located in the sub-basement and two packaged units provide 260 tons of air conditioning to this museum.

A 240-ton centrifugal compressor, condenser, water cooler, and pumps, part of the central system, circulate chilled water to each coil of the system. Water cooling towers are situated on the roof over the museum's workshops, it was noted.

The system is engineered for automatic temperature and humidity control.

What is believed by the museum to be a unique service is the "Artmobile." This is an air conditioned trailer truck which brings art exhibitions to people living in remote communities.

Trane To Condition Engineering Bldg.

LA CROSSE, Wis. — The Trane Co. has announced that it awarded contracts for the construction of a new engineering office building. Cost of the building and equipment has been set at \$1,250,000.

Peter Nelson & Son, Inc. was given the general contract, and George J. McKoskey, the plumbing, heat, air conditioning, and ventilating award. Clark-Bracken, Inc. will handle the electrical work. All three firms are located in La Crosse.

Another contract for a power load distribution substation was made to The Federal-Pacific Electric Co. of Newark, N. J.

Construction for the 65,000-sq. ft. engineering building, which will consist of basement and one-story-above-grade, got under way April 2.

PEERLESS Hi-F (High Efficiency) AIR COOLED CONDENSER NO-WATER



Peerless is a name that dates back to the pioneer days of finned coil manufacture. With this background of experience it is no wonder that to "oldsters" in the industry and "newcomers" as well, the name Peerless stands for integrity.

The Hi-F Air Cooled Condenser is the culmination of years of know-how reflected in a design that assures maximum B.T.U. capacity season after season. In addition, the new and exclusive patent-applied-for Peerless manufacturing process is so efficient and rapid in operation that on time delivery is assured to any contractor even under emergency conditions.

Write for Bulletin No. NW 155 containing full engineering information on the Hi-F Air Cooled Condenser.

Hi-F Air Cooled Condenser for mounting in stand on roof or remote outside location—also indoor installations with discharge duct to outside. Low Cost. ELIMINATES USE OF WATER. ¾, 1, 1½, 2, 3, 5, 7½ and 10 ton capacities.

MANUFACTURERS, NOTE—Send us blue prints of your evaporator and condenser requirements for a Hi-F quotation. Please indicate delivery requirements.

PEERLESS OF AMERICA, INC.

Dept. N, 5830 N. PULASKI ROAD, CHICAGO 30, ILL., U.S.A.

RECTORSEAL No. 2

highest quality sealant
lowest cost
finest package



What a combination to beat. Nothing has been spared to make Rectorseal No. 2 the finest compound available for preventing leaks on refrigeration installations. Yet the price is from 20% to 80% lower.

The handy tube has a nozzle tip applicator for easy, clean application. Each tube individually packed in a sturdy cylindrical screw top fiber-board carton.

Thin in the tube, Rectorseal No. 2 spreads smoothly without waste. It thickens to a plastic elasticity in the joint to positively seal against leaks. Insoluble in all refrigerants (gas or liquid) and in oil and water.

Write today for generous free sample of Rectorseal No. 2.

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RECTORSEAL

NUMBER TWO

Sterling Appoints Dean Sales, Advertising Mgr. American-Standard 3-Mos. Sales Rise In Cooling, Industrial Equipment, Controls

MILWAUKEE—Sterling, Inc. here, manufacturer of heating and temperature control equipment, announces the appointment of Ross H. Dean as sales manager.

Dean is the former sales manager, Special Products Div., Pressed Steel Tank Co., Milwaukee, a position he held for approximately seven years, it was added.

He is a graduate mechanical engineer, Purdue university (class of '39) and is a registered professional engineer. Sports fans know Dean as a veteran Big Ten football official and referee of the 1956 Rose Bowl game.

In addition to handling Sterling's over-all sales program, Dean will also supervise the firm's advertising program, it was noted.

Chemical Solvent Prints Use Direction on Each Ice Machine Cleaner Bag

ATLANTA — Convenient printed directions for use are now being printed on each safe-to-handle bag of CSCO ice machine cleaner powder, reports Chemical Solvent Co.

One polyethylene bag of the cleaner powder is normally sufficient for cleaning two small ice-making machines or one 300-lb.-per-day machine, it was further stated.

In addition to cleaning all types of ice-making machines, CSCO ice machine cleaner powder is also effective and safe for removing scale and other deposits in institutional dishwashing machines, the company noted.

Honeywell Ups 3 In Expanding Program Of Field Service

MINNEAPOLIS — Promotion of three Minneapolis-Honeywell Regulator Co. commercial sales engineers is announced by John E. Haines, vice president in charge of the firm's commercial division.

Frank Neal has been named western market manager for schools and will serve users in 13 western, mountain, and southwestern states; Robert J. Hoefer has been appointed branch commercial sales manager in Honeywell's Cincinnati office; and Richard Beaubien has been promoted to a similar post in San Francisco, the company official said.

The appointments, Haines said, are part of the company's expanded program of field service to schools and commercial establishments in providing automatically controlled heating, ventilation, and air conditioning.

Neal has been a member of Honeywell's Los Angeles branch staff since joining the company in 1948. Hoefer served M-H sales in Cleveland and Akron after joining the company in 1949. Beaubien has been with the company in San Francisco since 1952.

NEW YORK CITY — American Radiator and Standard Sanitary Corp.'s sales of air conditioning equipment, controls, and industrial products were substantially higher during the first quarter of this year than in the same quarter last year, Joseph A. Grazier, president, reported to stockholders recently.

Despite a decline in its plumbing fixture business, American

Standard sales for the first quarter this year were \$96,132,414 as compared with \$91,082,517 last year. First-quarter earnings were \$4,431,150 as against \$4,545,557 in 1955.

Grazier also told the stockholders that American Standard intends to "defend vigorously" its merger with Mullins Mfg. Corp., maker of kitchen equipment.

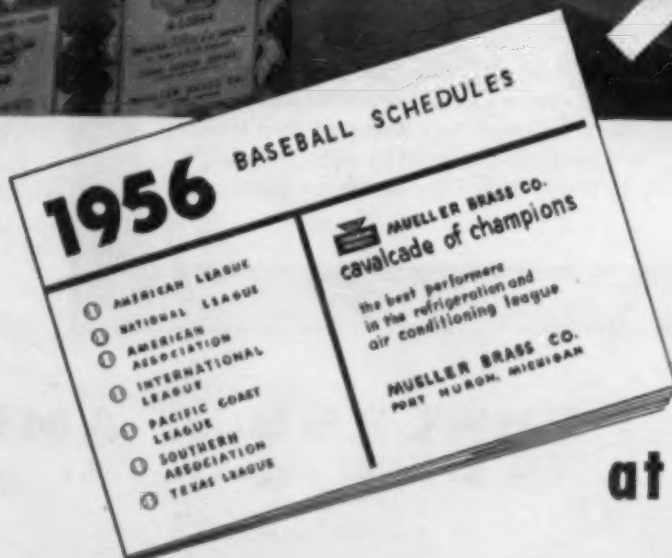
Carrier Names Wilgus Traffic Manager Dravo Appoints Snell Texas Distributor

SYRACUSE, N. Y.—Ralph C. Wilgus has been named traffic manager of Carrier Corp. according to an announcement by Adolph G. Ruediger, director of purchases. He will be a member of the Central Production Staff.

Donald V. McPherson continues as traffic manager, Unitary Equipment Div., handling traffic matters for operating divisions in Syracuse.

PITTSBURGH—Snell Refrigeration Supply Co., Dallas manufacturers' representative, has been appointed distributor of Dravo heating equipment for a 53-county area in Texas.

Dravo Corp. manufactures industrial and commercial warm air space heating and process drying equipment. The Snell company will sell and service Dravo's complete line.



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sports schedule
for 1956
at your wholesaler's

Milk, Cream Use Up 4½% During 1955

Servel Boosts Commercial Div. Capacity 600% by First Phase of Modernization

FLEMINGTON, N. J.—Last year non-farm per capita consumption of fluid milk and cream rose 4½% over 1954, according to Harold W. Comfort, president of Borden Co. in a recent statement.

The dairy products industry in general is showing "evidence of growth," he said. Per capita ice cream consumption also "is on the uptrend."

EVANSVILLE, Ind.—Servel's production capacity has been increased 600% with the recently completed first phase of a plant-wide modernization program which has been started in the company's commercial refrigeration division.

Announcement of the \$500,000 expansion project, which involved the addition of new tool-

ing and machinery for producing the 1956 line of hermetic condensing units and power units, was made by John R. Morrill, division vice president and general manager.

Starting several months ago, a new streamlined plant layout was made which resulted in the elimination of production bottlenecks, unnecessary material



INSPECTING new Servel Supermet condensing units on final assembly lines (l. to r.), John R. Morrill, vice president and general manager; A. G. Wirick, manager of manufacturing; Hardy Austin, factory superintendent.

handling, and other time-wasting and costly methods.

New machinery was added and other processing equipment was regrouped to improve the movement of compressor parts between related operations, Morrill said. This was one of the important factors in the modernization program which was to make possible the greatly accelerated production rate.

A new system of overhead conveyors now carries refrigeration power units from a temperature- and humidity-controlled assembly room through spray finishing booths in a steady movement by way of a ceiling route directly to the condensing unit final assembly.

"By the time they reach this point they are completely dry and ready for further handling and shipment from the factory," it was pointed out.

Servel's line of commercial refrigeration and air conditioning units was introduced early this year with a number of new engineering features. Most notable were design changes in the larger twin-cylinder condensing units, where a new vertical power unit replaced a previously horizontal design.

Servel's hermetically sealed condensing units are now produced in all sizes from ¼ to 2 hp., with a line of hermetic power units through 7½ hp. Available also are capillary tube type condensing units for ¼, ½, and ¾-hp. applications.

Victor Products Names Stratford Supply Co. as Philadelphia Area Agent

HAGERSTOWN, Md.—Stratford Supply Co., Philadelphia, has been appointed selling agent in the Philadelphia trading area for all Victor commercial refrigeration products, as well as Torvic upright and chest type "Quickfreezers," it was announced by J. K. Noel, Jr., vice president in charge of sales for Victor Products Corp. here.

The Victor line includes beverage coolers, industrial ice makers, walk-in refrigerators, frozen food, and display cases.

Stratford Supply is headed by Harry Fogel and a corp of qualified specialists with many years of sales and engineering experience, the firm said.

Bond Equipment Moves

COLUMBIA, S. C.—Bond Equipment Co., distributor for commercial refrigeration and food service equipment, recently moved into a one-story building at 506 Assembly St.

With show windows on both Assembly and Wheat Sts. in the 15,000-sq. ft. building, Bond has more display space.



see the
cavalcade of
champions

now on display at
your wholesaler's

MUELLER BRASS CO.

PRODUCTS

the best performers
in the refrigeration and
air-conditioning league



FLARE FITTINGS



PACKED LINE VALVES



STREAMLINE SOLDER-TYPE FITTINGS



LIQUID INDICATORS



DRIERS-STRAINERS



DIAPHRAGM LINE VALVES



COPPER TUBE

MUELLER BRASS CO.

PORT HURON 9, MICHIGAN

For more information about products advertised on this page use Information Center, page 28.

Unarco Redesigns 2 Packaged Units for Industrial, Commercial Applications

CHICAGO—Two newly redesigned and improved types of packaged air conditioners ranging in size from 7½ to 60 hp. have been marketed by the Union Asbestos & Rubber Co.'s Heating and Cooling Div., it was announced here recently by L. H. Kramer, who is general manager.

The packages, Kramer said, known as the AECR and the SCR are designed specifically for stores, large offices, and industrial installations.

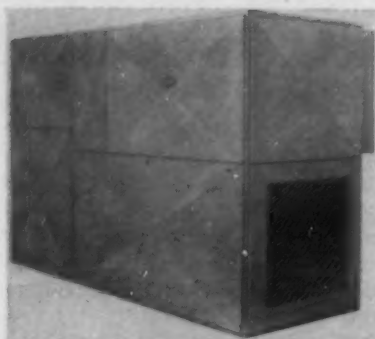
The AECR, he pointed out, is equipped with an evaporative condenser, while the SCR utilizes water-cooled condensers.

Both packages can be equipped with three types of heating coils as optional accessories—steam, non-freeze, or hot water.

The AECR is available in 7½, 10, 15, 22½, 30, 40, 50, or 60-hp. capacity. The 10 through 30-hp. and 60-hp. AECR's have multiple compressors and multi-refrigeration circuits, one for each compressor. These permit complete control of both temperature and humidity.

"Under light load conditions only one system is operating but as the cooling load increases, the remaining systems cut in automatically.

"For instance, the 10, 15, and 60-hp. units have dual compressor circuits, while the 22½ hp. has a triple circuit, and the 30 hp. has a quadruple compressor circuit.



FRONT VIEW of the Union Asbestos & Rubber Co.'s newly-designed and re-engineered AECR air conditioner shows the evaporative condenser section as an integral part of the unit on the extreme left. Unarco's AECR's are available from 7½ to 60 hp.

Each unit, Kramer said, is made up of three basic sections—the compressor, the conditioner, and matched evaporative condenser. An unusual feature, according to Kramer, is that the 10 through 30-hp. and 60-hp. packages have a matched

evaporative condenser equipped with multiple refrigerant circuits.

Kramer said the matched evaporative condensers, an exclusive Unarco design, provides water savings up to 95%. He continued:

"The standard AECR has a four-row cooling coil but it can be equipped with a six-row coil for high latent load requirements."

The SCR package is equipped with a water-cooled condenser, utilizing either a direct water supply or a water tower, and are available in the same capacity range and multiple circuit arrangements providing the same flexibility as is available in the AECR model.

Both of Unarco's new packages, Kramer said, are completely factory assembled units, tested, and ready to put into operation immediately after being installed.

Report on Use of Wakefield Ceiling as Air Diffuser Released

VERMILION, Ohio—A report on the performance of a Wakefield luminous ceiling as an air diffuser for air conditioning has been released by the Wakefield Co. here. The report was made to Wakefield by the Delbrook Ventilating Co., which conducted the study.

CEILING INCLUDES PLASTIC LIGHT DIFFUSERS

The Wakefield ceiling includes corrugated plastic light diffusers that rest on flat baffle rails. Air passes through the spaces between the diffusers and the baffle rails. Each such space has an area of 1.04 in., which averages 3.2 sq. in. for each square foot of ceiling.

The performance was studied for air quantities of 1 to 4 c.f.m. per sq. ft. A 20° F. difference was maintained between the room temperature and the temperature of the air entering the plenum above the ceiling, which ranged from 18 to 24 in. deep.

Delbrook reported that the temperature gradient between floor level and 1 ft. below the ceiling was for all practical purposes, zero. Maximum deviation was 1° F.

Air movement over all ranges were well within acceptable standards and can be considered draft free, Delbrook added. Complete equilibrium of an air flow is established 45 seconds after air enters plenum.

Delbrook found that there is a significant panel cooling effect by heat absorption through the plastic light diffuser. The lighting load was picked up in the plenum by the conditioned air and did not enter the room.

RANDOM POSITIONING

A random positioning of the corrugated plastic on its supporting acoustical baffle had no measurable effect on air diffusion, Delbrook reported, pointing out that no special care need be taken in installing the plastic to assure air passage.

Grilles were not found to be significant at the duct openings in the plenum when six outlets were used for an 18-ft. by 12-ft. 9-in. room. A grille was employed when only one outlet was used in order to increase the projection of the air stream across the 10-ft. dimension of the plenum.

No significant difference could be measured between the three duct arrangements tried.



WHAT 22 YEARS' EXPERIENCE TELLS ME ABOUT THE FUTURE OF REFRIGERATION

By Tully A. Gross

"Our business records clearly show trends that help forecast the future of refrigeration," says Mr. Tully A. Gross, president of Harding & Gross, refrigeration engineers and contractors, Cambridge, Mass. "We've been in business 22 years. During that time we've seen Du Pont's 'Freon' refrigerants supplant all other types.

"We process from 150 to 200 industrial air conditioning and refrigeration contracts a year. Our recent installations range from cyclotron refrigeration and skating rinks to live-lobster storage-tank cooling. In every case 'Freon' has been perfect for the job.

"We rely so much on 'Freon' refrigerants that a dependable source of supply is very important to us. That's why we've been doing business with the A. E. Borden Company for ten years. They give prompt, efficient service on any of

our 'Freon' refrigerant needs.

"We don't know of a more versatile group of refrigerants or any that can match the properties of 'Freon'. Our experience shows that 'Freon' refrigerants have become a most vital part of the refrigeration and air conditioning industry today."

You can get Du Pont "Freon" refrigerants at your wholesaler's now for any air conditioning or refrigerating job. Reciprocating, rotary or centrifugal compressors; household, commercial or industrial applications—there's a "Freon" refrigerant ideally suited to your installation. "Freon" is your best refrigerant buy, because it's pure, dry and safe, just as it has been ever since Du Pont started making it 25 years ago. Be sure to ask your wholesaler for Du Pont "Freon" refrigerants.

Want more information or technical data on uses of "Freon"? Write to E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 15, Wilmington 98, Delaware.

EXPERIENCE HAS NO COMPETITORS



Increase COOLING TOWER EFFICIENCY With

ASPIR-JET

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure. Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: If you are not now using or stocking this outstanding new product, wire or write

THERMAL AGENCY

National Sales Agents

1515 DALLAS • HOUSTON, TEXAS

Educational Show on Installation, Servicing Controls Draws Record-Smashing Crowds on Current 23-City Tour

'Penn Controlorama' Nearly Doubles Prior Attendance Record

GOSHEN, Ind. — An intense thirst for information and knowledge shown by wholesalers, dealers, and installers is smashing all-time attendance records at "Penn Controlorama," according to officials of Penn Controls, Inc. originator of the educational show on installation and servicing of controls for refrigeration, air conditioning, and heating.

Proof Industry Wants To Keep Pace with Advances

R. H. Luscombe, Penn's manager of marketing, said this phenomenal attendance presents dramatic proof that the people of all levels of the industry intend to keep pace with the latest advances in controls and equipment.

Controlorama is now being presented throughout the East and Northeast by the control firm and sponsoring wholesalers of heating and cooling controls. With 13 shows completed on its current 23-city tour, Controlorama has already played to audiences totaling nearly 6,000.

Old Record of 2 Shows Daily Beaten in 1 Show

This is almost double the previous show attendance record set by a previous tour of the same cities. To top it off, the old attendance record came when Penn put on two shows in each city, a heating session one night and cooling the next—which resulted in many persons attending both shows. This year's show packs the works into a one-night stand.

Pittsburgh is a good example of trade interest in Controlorama. In 1952, a grand total of 350 attended the show the two nights it played. April 3, 1956, 704 tradesmen packed the Webster Hall hotel to see the show on its "one-nighter."

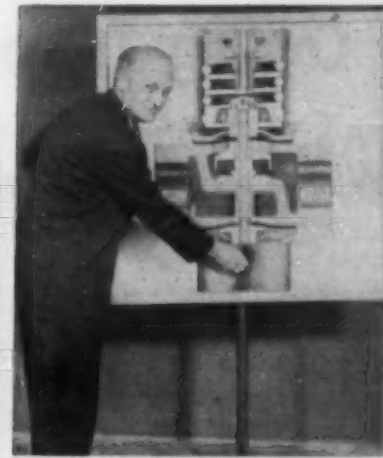
In 1950, the last time Penn's



704 wholesalers, dealers, installers, and engineers attended the Controlorama meeting in Pittsburgh.

control show played Providence, R. I., 300 attended. On April 30, 1956, Controlorama drew 625 in Providence!

In Boston so many return cards came in from trade people indicating they would attend Penn's show at the Sherry Biltmore on May 1, that a second Boston date was hurriedly set



R. H. Luscombe, Penn's Manager of Marketing, illustrates the operation of a Penn water valve. Such large operating models as this made Controlorama interesting to the audience.

up for May 14 to handle the overflow from the May 1 show.

Luscombe, who does much of the speaking on the Controlorama circuit, is not the least

bit perplexed at the crowds that are attending. Said he:

"Make information readily available to a man which will help him in his business and he'll come after it. And, both he and the industry he represents will be richer because of it."

The control manufacturer has been putting on such educational shows as a service to the industry for more than 20 years, although Controlorama is far more elaborate than any previously shown by the company.

Show Re-Opens May 14

Following its date in Portland, Me. on May 3, Controlorama takes a "breather" until May 14 for its second Boston date. Then it winds up with Albany, N. Y., May 21; Utica, May 23; Syracuse, May 24; Rochester, May 28; Buffalo, May 29; Erie, Pa., May 31; and Cleveland on June 4.

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SPORLAN

**Right-Down-the-Line
PEAK PERFORMANCE**

*on all
Commercial, Air Conditioning
and Ammonia Installations*

So always buy
Sporlan throughout and get
that perfect combination
of
Catch-Alls,
Solenoid Valves,
Thermostatic Expansion Valves
and
Refrigerant Distributors
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For more information about products advertised on this page use Information Center, page 28.

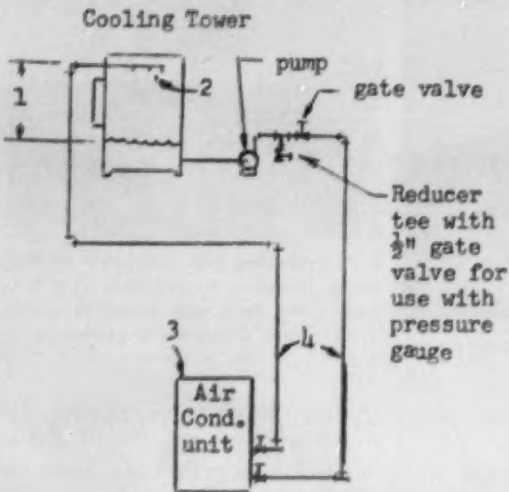
Sizing, Locating Cooling Tower Pumps

To Hydraulically Size Pump One Must Know G.P.M. Capacity Needed And Ft. of Water Head When Pumping the Required Amount of Water

DETROIT—Some pointers on sizing and locating pumps for cooling tower applications were offered to the Greater Detroit chapter of the Refrigeration Service Engineers Society recently by Tom Redmond, field engineer for Fairbanks, Morse & Co.

To hydraulically size a pump to a cooling tower application, Redmond explained, it is necessary to know two things:

- 1. The capacity required in gallons per minute.
 - 2. The feet of water head in the system when pumping the required gallons of water.
- The capacity required in g.p.m. is generally calculated at



TYPICAL cooling tower installation showing location of pump and other components.

3 g.p.m. per ton of refrigeration hooked to the cooling tower.

Calculating Water Head

The feet of water head in the system is calculated by adding the sum of the four various types of losses in the system:

- 1. The feet of head loss in the cooling tower. This amounts to the distance from the water level of the discharge pipe in the cooling tower in feet.
- 2. This distance is of cooling tower manufacturer's design and is usually shown in his publications. If given in inches, it should be converted to feet.
- 3. Feet of head loss due to the pressure drop required by the nozzle to spray the water, if the tower is equipped with nozzles. If given in pounds pressure (p.s.i.), multiply by 2.31 to convert to feet of head. (It takes 1 lb. of pressure to raise a column of water 2.31 ft.).
- 4. Feet of head loss in the air conditioning unit. This loss is in the design of the unit and is usually shown in the manufacturer's literature. This loss is usually shown as pressure drop through the air conditioning unit and varies to the g.p.m. of water being passed through the unit. If given in p.s.i., multiply by 2.31 to convert to feet of head.
- 5. Feet of head loss due to friction in pipe and fittings. This is given in Table 1. Change the number of elbows, tees, and valves being used in the sys-

Table I—Allowance In Equivalent Length of Pipe for Standard Fittings

Pump Size	TEE		ELBOW		VALVE	
	Side	Run	90°	45°	Gate	Globe
1/2"	4.2	1.7	3.6	.7	.6	22.0
3/4"	5.3	2.4	4.4	.9	.7	24.0
1"	6.6	3.2	5.2	1.2	.8	29.0
1 1/4"	8.7	4.6	6.6	1.7	1.1	37.0
1 1/2"	9.9	5.6	7.4	2.1	1.2	42.0
2"	12.0	7.7	8.5	2.7	1.5	54.0
2 1/2"	13.0	9.3	9.3	3.2	1.7	62.0
3"	17.0	12.0	11.0	4.0	1.9	79.0
4"	21.0	17.0	13.0	5.5	2.5	110.0

—From Hydraulic Institute

tem into equivalent length of feet of sized pipe being used. Add this to the total length of pipe being used.

'Pipe Friction Table'

From the "Pipe Friction Table" (Table II), under pipe size and under g.p.m., find the head loss per foot of pipe. Multiply this figure by the equivalent of pipe.

Add all of these four head losses together and you have the total head in feet required of the system at the required capacity.

Then, from a pump manufacturer's pump selection chart select the pump directly on required capacity above the required head conditions. From the pump curve on this chart, calculate the pressure gauge reading at the required capacity. This will be the head shown

divided by 2.31. Restrict the flow of the pump with a gate valve until this pressure shows on the gauge.

Head loss of the system will increase with age and the gate valve can be opened to increase the flow through the system.

It will be noted that at high head pressures and low capacity, the pump will use less horsepower than at low head pressures and high capacity.

Important Point To Remember

Several important things to remember when installing pumps were pointed out to the servicemen by Redmond.

- 1. Use pipe increasers and short nipples to increase the pump suction and discharge to the size of the system pipe as
- (Concluded on next page)

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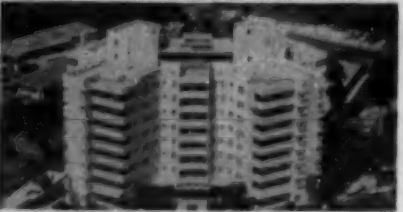
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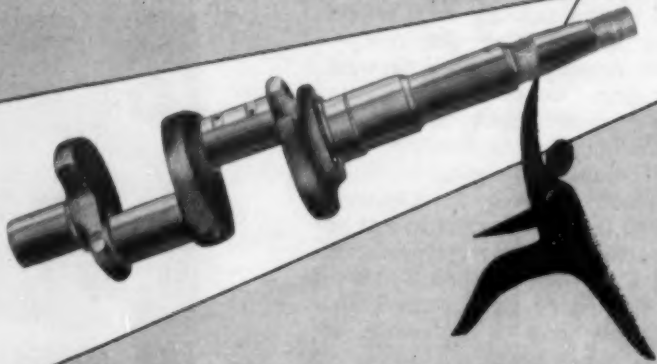
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Table II—Pipe Friction Table

Head Loss Feet of Water Per Foot of Wrought Iron or Schedule 40 Steel Pipe.
For Copper Multiply by 0.86.

PIPE SIZE	FLOW — GALLONS PER MINUTE —														
	2	4	6	8	10	12	15	20	25	30	35	40	45	50	60
1/8"	.035	.115	.223	.368	.548	.763	1.013	1.398	1.918	2.573	3.363	4.288	5.348	6.543	8.978
1/4"	.048	.151	.277	.438	.623	.833	1.068	1.338	1.713	2.193	2.773	3.453	4.233	5.113	6.993
3/8"	.061	.197	.357	.543	.753	1.003	1.283	1.603	2.003	2.483	3.003	3.583	4.223	4.923	6.503
1/2"	.074	.241	.441	.661	.901	1.181	1.501	1.861	2.261	2.701	3.181	3.701	4.281	4.921	6.401
5/8"	.087	.281	.501	.741	1.001	1.301	1.641	2.021	2.441	2.901	3.381	3.901	4.481	5.121	6.601
3/4"	.100	.321	.561	.821	1.101	1.421	1.781	2.181	2.621	3.101	3.581	4.101	4.681	5.321	6.801
1"	.113	.361	.621	.901	1.201	1.541	1.921	2.341	2.801	3.301	3.821	4.381	4.981	5.621	7.101
1 1/4"	.139	.431	.761	1.101	1.461	1.861	2.301	2.781	3.301	3.861	4.461	5.101	5.781	6.501	8.101
1 1/2"	.152	.471	.821	1.181	1.581	2.021	2.501	3.021	3.581	4.181	4.821	5.501	6.221	7.001	8.601
2"	.178	.541	.941	1.341	1.781	2.261	2.781	3.341	3.941	4.581	5.261	5.981	6.741	7.621	9.201
2 1/2"	.201	.611	1.061	1.501	1.981	2.501	3.061	3.661	4.301	4.981	5.701	6.461	7.261	8.181	9.801
3"	.224	.671	1.161	1.641	2.161	2.701	3.281	3.901	4.581	5.301	6.061	6.861	7.701	8.681	10.301
3 1/2"	.247	.721	1.241	1.761	2.301	2.861	3.461	4.101	4.781	5.501	6.261	7.061	7.901	8.901	10.601
4"	.270	.771	1.321	1.861	2.421	3.001	3.621	4.281	4.981	5.701	6.461	7.261	8.101	9.101	10.801

—For efficient systems use values below heavy line.

—From Hydraulic Institute

Sizing, Locating Cooling Tower Pumps--

(Concluded from preceding page) reducing noise troubles. close to the pump as possible. This reduces friction.

2. Locate the tee and then the gate valve in the pump discharge line close to the pump. The gate valve is closed down to restrict the flow of water to the desired capacity.

Pressure gauge is placed off the tee to measure total feet of head on the pump so the gate valve can be closed down to restrict the pump to desired capacity.

Drain Pumps In Winter In Unheated Locations

3. Pumps located in unheated locations should be drained during the winter to avoid damage due to freezing temperatures.

4. To avoid damage to mechanical seals, fill the pumps with water before starting motors to check rotation.

5. Pumps should be located so that they pump from the cooling tower to the air conditioner. They can push water almost any distance, but their suction ability is limited, it was explained.

6. Pumps must be located below the water level of the cooling tower so that water always flows into the pump.

Place Pump on Roof If Bothered by Noise

7. If noise is a problem, the pump can be placed on the roof near the cooling tower rather than inside with the air conditioning unit. The length of pipe used is a big factor in

8. There are two types of noises.

a. Velocity noise is caused by water flowing too fast through a given size pipe. This can be cured by increasing the pipe size or decreasing the rate of flow of the water.

b. Cavitation noise generally

occurs in pumps when the suction ability of the pump is exceeded, or under certain circumstances, when the discharge head is lower than what the pump was designed for.

This sometimes happens when the head on a system is much lower than calculated. It can be remedied by installing a smaller pump or restricting the flow of water through the pump with a valve in the discharge line.

32 Complete First '56 Sales Training Illinois Engineering

CHICAGO—Thirty-two representatives from as many cities have just completed Illinois Engineering Co.'s first sales training school in 1956, it was announced.

In charge of the school was Clinton A. Pickett, vice president and general manager.

The purpose of the training sessions was to discuss the sale and technical applications of the products of the company, which include heating and power specialties, heat exchangers, condensation pumps, and convectors.

Illinois Engineering Co., a 56-year-old firm, is a wholly-owned subsidiary of American Air Filter Co., Inc., it was explained.

Honeywell Names Lenox General Manager Of Appliance Controls

MINNEAPOLIS — John R. Lenox, who for several years has been serving in various key administrative positions at Minneapolis-Honeywell Regulator Co., has been appointed general manager of the firm's Appliance Controls Div. at Gardena, Calif.

Raymond S. Fries, formerly manager of new products in Minneapolis, has been transferred to the California plant with Lenox to become factory manager.

The \$1-million Gardena plant, which produces automatic controls for water heaters, floor furnaces, wall heaters, and central heating plants, recently has been expanded in a move that will double its operations.

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Facilities include large central air conditioning plant with chilled water distribution system through entire communities for residential and industrial air conditioning totaling 14,000 tons capacity plus 700 tons of refrigeration for manufacture of ice and storage of commissary supplies.

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Write outlining work experience and personal history.

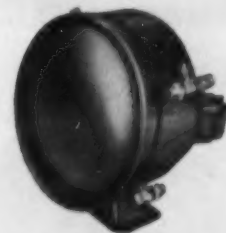
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REFRIGERATION SYSTEMS

Reduced Axial Depth Condenser Fan Developed

KEY NO. F-520
TORRINGTON, Conn.—A low-cost six-bladed fan with reduced axial depth has been developed by The Torrington Mfg. Co., primarily as a condenser fan (with a slinger ring) in room air conditioners.

Available also with four blades, the Torrington type C-12-6 axial-type impeller has a 12-in. tip diameter and can be

used with either a solid or rubber-bushed hub.

With or without the slinger ring shown in the photo, the new fan may be obtained in a wide variety of pitches. The six-bladed model includes three 2-bladed one-piece sections precisely nested together and secured by the hub. The slinger ring is made in one piece, and the slinger-ring tabs are part of the blades themselves.

Axial depth of fans in the type C-12-6 series varies from 1-15/16 to 3-5/16 in.

Taco Offers Cooling Tower Centrifugal Pump

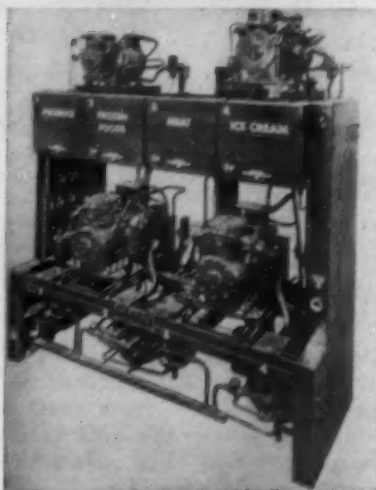
KEY NO. F-521
CRANSTON, R. I.—Taco Heaters, Inc. recently offered a new series 170 centrifugal pumps to provide cooling tower circulation in air conditioning systems.

These compact units come in two sizes now—1/2 and 1/4-hp. models—with larger models available later. Motors are 3,450 r.p.m., 60 cycle, single-phase standard jet type with overload protection

and permanently sealed ball bearings, the manufacturer said.

Mechanical seals used (two-piece type) are self-adjusting, self-lubricating, with closed type, balanced impellers. No lubrication is needed. A fine-grained cast iron with brass wearing ring volute gives mounting flexibility. A heavy stamped steel base permits slightly out-of-line pump connections.

McCray Announces 2 Compressor Rack Sizes



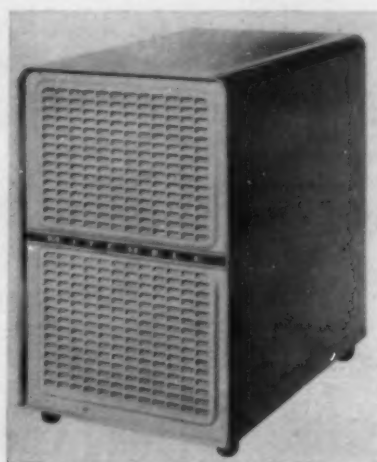
KEY NO. F-522
KENDALLVILLE, Ind.—A compressor rack, available in two sizes, which will be identified as the CR-2 and CR-4, has been announced by McCray Refrigerator Co., Inc. here.

These compressor racks are double-decked stands, built to ac-

commodate two or four compressor assemblies, that can be delivered to the job as a complete package ready to be put into service with a minimum of field installation work, the company said.

Built to accommodate compressors up to and including 5 hp., these racks take up only 6 or 10 sq. ft. of floor space, the manufacturer stated.

It is only necessary to run tubing to the proper machines, and one power line, one water line, and one drain line to the compressor rack.



Dehumidifier Removes 2 to 3 Gals. Daily

KEY NO. F-524
CHICAGO—Mitchell Mfg. Co. has introduced an "Economy" dehumidifier. Its air drier removes 2 to 3 gals. of water a day, according to the firm, depending on moisture and humidity conditions.

Water disposal is accomplished either by a non-rusting container which can be emptied, a hose connection for water disposal through a drain, or the unit may be placed over a drain and the collecting pan will deposit water directly.

The dehumidifier will remove approximately 17 to 25 pints of water a day from a closed area of 10,000 cu. ft., the manufacturer states.

3-Conductor Flat Rip Cord Designed by G-E

KEY NO. F-523
BRIDGEPORT, Conn.—A smaller, more attractive three-conductor flat rip cord for use on window-type room air conditioners has been announced by General Electric's Wire & Cable Dept. here.

The new cord, significantly smaller in size than jacketed types, incorporates a green ground conductor located in the web between the two thermoplastic conductors," G-E said.

When the conductors are pulled apart, the green ground wire is exposed.

"The rip-cord design is very flexible and permits easy stripping and quick, effective termination of the conductors."

The new cord is listed by the Underwriters' Laboratories, Inc. in sizes No. 10 to 18 Awg. for 300 volts to replace the type S jacketed cords, the manufacturer emphasized.

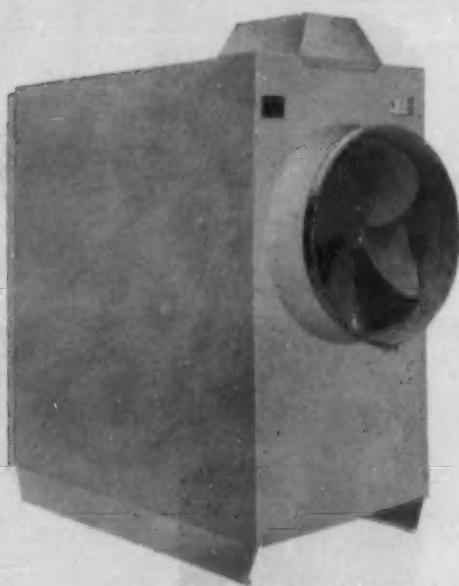


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A Havens Tower is easily installed . . . economically maintained—a highly resistant vinyl covering known as HAVENS COAT protects the tower, inside and out, from rust, corrosion, salt air and all water-treating chemicals.

• Also available with Hot Dip Galvanizing after fabrication.



HAVENS 2 TO 10 TON WRAPAROUND—Ideal for light industrial and home use. Furnished with combination motor cover and belt guard as are all Havens Towers.

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Only the finest heavy-gauge steel sheets and select all-heart California redwood are used in the construction of Havens Towers.

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Products Advertised

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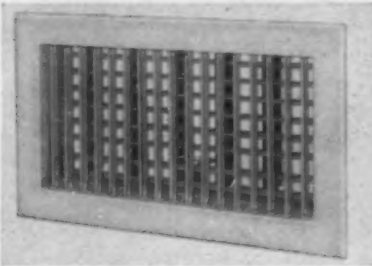
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DETROIT 26, MICHIGAN

Register, Grille Line Designed To Cut Noise



—KEY NO. F-525—

COOPERSVILLE, Mich.—A new line of commercial type registers and grilles has just been announced by Air Control Products, Inc. here. The units have been designated the "Multi-Trol" line.

The unit's face bars are built with air foil contours to reduce resistance to a minimum and make both registers and grilles quiet at high velocities, the manufacturer said.

Bars are individually adjustable. Rounded corners of the Multi-Trol line are electric smash welded.

The new Multi-Trol line features the exclusive Air Control "Shallow-Valve"—opposed action louvers are so designed that the depth of the valve is reduced to a minimum.

This shallow depth permits the use of the double deflection registers in standard ducts and stack-heads, the company said. The valve is adjusted with a key.



Table Top Refrigerator Produced by Glascock

—KEY NO. F-527—

MUNCIE, Ind.—Designed for home or commercial installations or wherever space is at a premium, is the recently introduced "Glasco" table top refrigerator, according to the manufacturer, Glascock Bros. Mfg. Co. here.

Foods, medicines, and beverages can be stored inside with 660 sq. in. counter-height work surface above at a savings of 324 sq. in. wall cabinet area, the company claimed.

The unit features 5-cu. ft. storage space with three shelves and freezing space for 63 ice cubes or 10 lbs. of food. It has a 1½-in. select maple cutting board available as an accessory, the manufacturer added. Matching standard kitchen cabinets, sinks, and ranges in height and depth, the table top refrigerator has a specially hinged door which permits placing it flush against other appliances.

AMF Lowerator Adds Mobile Milk Dispenser

—KEY NO. F-528—

NEW YORK CITY—A mobile, refrigerated milk carton and bottle dispenser was recently added to the AMF Lowerator line of self-leveling dispensers, according to the manufacturer, Lowerator Div., American Machine & Foundry Co.

Accommodating milk cartons or bottles of any shape or size, the refrigerated dispenser provides automatic counter-level dispensing of ½-pt. from a self-contained sanitary unit. It can be wheeled on its all-swivel casters to any position, the company said.

A calibrated spring mechanism keeps the top rack always at the same level whether the unit is full or not. To refill up to 320 ½-pt. cartons or bottles, additional racks are placed in from the top, it was stated.

The Lowerator dispenser is of



all stainless steel construction, with dispensing unit, compressor, evaporator, and thermostat completely enclosed.

Everett Develops Germicidal Lamp for Systems

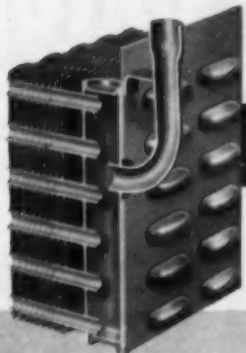
—KEY NO. F-526—

ABILENE, Texas—An ultra-violet germicidal lamp unit for installation in heating, air conditioning, and ventilating ductwork systems was offered here recently by Everett Engineering Co.

Claimed to kill air borne diseases and viruses, the unit is 18 in. overall. It is made of stainless steel with a rubber covered cord and molded rubber plug, insulation protected wiring, runs, on 110-120-volt a.c. current.

KARMAZIN

nested-fin condensers



transfer

more

BTU's

- ★ nested-fin construction—all-steel, hydrogen copper brazed
- ★ leak tested at 300 psi—F-12 and F-22 approved
- ★ consistent, efficient heat transfer—fins cannot loosen
- ★ free air flow design—uniform fin spacing

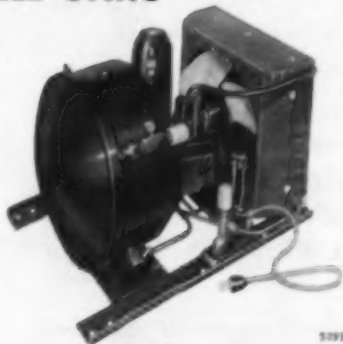
Karmazin-designed condensers (patented) dissipate more BTU's per cubic inch of core. Internal agitation of the refrigerant by corrugations inside the tube assures the best possible efficiency. Karmazin condensers are paint dipped and oven baked for inside applications. Weather proof finishes are also available. Size range: from ½ to 10 hp.

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Kelvinator Sealed Units—like the one illustrated—feature Karmazin nested-fin condensers. This Sealed Unit has a plug-in combination relay and thermal overload.

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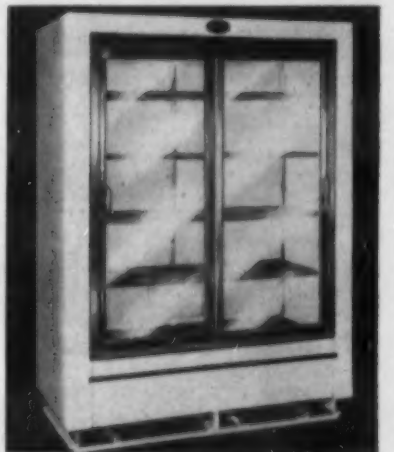
Wall Case Features Automatic Door Closer

—KEY NO. F-529—

DETROIT—Automatic door closing as an additional standard feature of the redesigned "Certified Air" model CAC-40 refrigerated dairy and beverage wall case is announced by Marvin Swain, president of The Frank-Dewey Co., the units' national distributor.

The new door closing device pulls the case's stainless steel sliding doors shut at the same rate, no matter how far they are opened.

A light, strong cable hooks onto the door. At the cable's other end spring tension and a one-piece, graduated-circumference pulley slide the doors shut automatically—smoothly and firmly. Tension is constant, and can be adjusted quickly and easily so that the



doors close as fast or as slowly as you want, Swain said.

There's
nothing
like
high
reserve
capacity!



PA 400 has the highest capacity for moisture adsorption under the most adverse conditions in refrigerator operation . . . higher than any other desiccant. This reserve capacity is a safety factor. PA 400 keeps the refrigerator running even though there is sufficient moisture in the system to completely "saturate" other desiccants.

No other refrigeration desiccant gives you as much as PA 400 . . .

- Highest capacity
- Minimum pressure drop
- Physical adsorption not chemical action
- Non-dusting
- Adsorbs acids
- Dries refrigerants to below 2ppm at 120° F.
- Non-deliquescent
- Does not channel

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Thor Power Introduces Portable Nibbler

—KEY NO. F-5210—

AURORA, Ill.—An electrically-powered portable nibbling machine 9-in. long capable of cutting sheet stock up to 20-gauge steel or 16-gauge soft metal was announced by the manufacturer, Thor Power Tool Co. here.

Tubes of 1½ in. in diameter, circles and curves to radii of 1 in. may be cut and internal cuts after drilling a hole in stock with no distortion or curling is claimed by the firm. Cutting head can be rotated either right or left and set at 30° or 90° angle to the machine body.

Toggle switch of the unit is

recessed to prevent accidental starting. With cutting punch recessed it is impossible for the operator to get fingers caught, it was stated.

Another portable machine, made by Thor, is the shear. It cuts all types of sheet metal with the same vertical reciprocating action as the nibbler, the company said.

Ceiling Diffuser Varies Air Patterns

—KEY NO. F-5211—

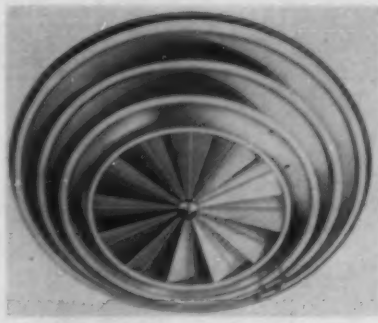
ROCKFORD, Ill.—A new high ceiling diffuser, model BP "Venturi-Flo" is now available from Barber-Colman Co.

It features a full variation of air patterns from horizontal to vertical and is capable of driving hot air to the floor from mounting heights up to 50 ft. even with temperature differentials as high as 40° F., the company claims.

Greater projection of warm air is possible with lower temperature differentials, it added.

Because it is adjustable and capable of long vertical throws, it is intended for use in heating, ventilating, and air conditioning applications in manufacturing

areas, gymnasiums, field houses,



auditoriums, and similar structures.

Adjustment can be made from the floor to provide air patterns ranging from vertical to horizontal. When adjustment from the floor is not practical, an adaptor unit can be furnished to permit adjustment through the duct from the crawl space above the ceiling.

Light, 'Spotlight Table' Designed by Bulman

—KEY NO. F-5212—

GRAND RAPIDS, Mich.—Bulman Co., Inc. here recently announced a new "Spotlight Table" which it claims is "light as a feather."

There are no square corners or



cracks anywhere in the item which can cut or scratch, the company declared. Designed for producing specials, iced specials, and similar things for food stores, Spotlight Table is 42 in. sq.

Constructed of Fiberglas, with green, yellow, or gray colors blended in, the table won't rust, leak, or rot, the firm said.



G-E Outdoor Thermostat Tips Off Indoor Unit

—KEY NO. F-5213—

MORRISON, Ill.—An outdoor thermostat control that tips off the indoor thermostat to changing weather conditions is now available from General Electric Co.

"The control helps prevent indoor temperatures from dipping with sudden outside changes providing greater comfort."

Ordinarily, G-E engineers explained, a drop in outside temperature means that the homeowner is required to adjust his indoor thermostat upward to compensate for heat loss through the walls.

"Heart of the outdoor thermostat is a small wafer of an unusual carbon compound that senses weather changes and then sends a minute electrical signal via a 25-volt circuit to the indoor thermo-

stat," it was explained.

"Thus warned, the indoor thermostat turns on the furnace to cope with lower temperatures."

Howard Offers Small Hp. Induction Motor

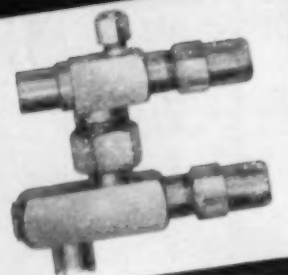
—KEY NO. F-520—

RACINE, Wis.—Howard Industries, Inc. here recently introduced a fractional horsepower induction motor, model 9200, which it claims is "extremely" precise.

A sleeve bearing motor, the unit features an open, self-ventilated frame for cool operation. It is available for pad, resilient ring, or end mounting.

Continuous duty rating range is: permanent split capacitor single phase in 50, 60, 120 cycle with 2, 4, or 6 induction poles—1/150 to 1/50 hp. In 2, 4, or 6 synchronous poles—1/250 to 1/60 hp. Polyphase (2 or 3) at 50, 60, 120 cycle and 2 or 4 induction poles—1/150 to 1/60 hp. and 2 or 4 synchronous poles—1/250 to 1/80 hp.

Air Conditioning Break-Away VALVES

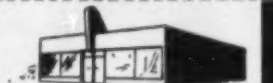


for units used in -

Homes



Stores



Office Buildings



This NEW Primore Break-Away Valve is specially designed for remote air conditioning installations. Assures fast, positive connection of tubing from evaporator to condensing unit.

- No Field Pre-assembly
- No Field Cleaning
- No Field Soldering

NO FIELD CHARGING

Condensing unit, evaporator and refrigerant tubing are all pre-charged, ready for hook up. Will not lose charge.

COMING SOON—NEW PRIMORE REFRIGERATION VALVE CATALOG



for Household and Commercial Refrigeration, Residential and Automotive Air Conditioning

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6 BIG REASONS WHY...

Gloekler MEANS BUSINESS

- ★ **EXPERIENCE:** Gloekler has been designing and manufacturing commercial refrigerators for more than 50 years.
- ★ **QUALITY:** Only materials and workmanship that assure maximum performance are used in our products.
- ★ **DESIGN:** Both standard and custom designs are available—offer every important advantage to users.
- ★ **PERFORMANCE:** We provide written assurance of faithful performance and economical maintenance of each unit.
- ★ **PRICING:** Experience and modern production methods allow highest quality standards at competitive prices.
- ★ **PROFIT:** Dealers are assured of full markups and additional potential profit from customers through sale of add-on features.

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STANDARD AND CUSTOM DESIGNS
FOR EVERY COMMERCIAL and INSTITUTIONAL USE

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Unit Air Conditioners

Have built into them 50 years' experience in conditioning air, 74 years' experience in refrigeration, and 103 years of successful engineering. Frick unit air conditioners installed in 1938 are still in service—and good for a long time to come.

These superior units are furnished in sizes of 3, 5 and 7½ hp. They have heavier (quieter) cabinets, well insulated; larger cooling surfaces; insulated condensers; conservative ratings; and many other advantages. All are shown in Bulletin 522. Your copy is waiting; write today.

Some desirable territories still open for qualified Distributors.

Baker Calls Commercial Refrigeration Equipment Secret of High Sales Volume



ASSISTANT in Child's Pastry Shop, Denver, holds open the door to one unit in the row of three Federal reach-in refrigerators which contain baked goods "baked one day ahead."

DENVER—"If modern sub-zero refrigeration is helping the baker to do a better job of serving his customers, there is no reason why it should be kept a secret," says Adolph Rothchild, operator of Child's Pastry Shop here.

He looks at his commercial refrigeration equipment in this way and calls it the secret of a high sales volume.

In less than three years after opening, Rothchild paid off his original \$8,000 investment, represented by a row of three Federal refrigerators which extend all the way across the rear walls of the bake shop.

These are finished in silver with doors individually numbered for quick cataloging of the baked goods contained within. They are "show pieces" the Denver baker "loves to show his customers."

Units Maintain Wide Variety of Temperatures

The reason Rothchild has so large a line-up of refrigeration facilities in the bake shop is the units' ability to consistently maintain a wide variety of temperatures, each of which fits a specific type of baked goods, he says.

Rothchild specializes in Danish pastry, with some 25 varieties kept under constant refrigeration. With sub-zero temperatures available in the left and right-hand boxes, milder storage temperatures in the center refrigerator, he can readily bake in large amounts, content that there will be no stales or discards to contend with.

The bakery is located in the University Hills shopping center in southeast Denver, near one of the city's largest residential suburbs, where incomes are higher than average.

The entire center is said to stress leisurely, friendly informal shopping. When Child's Pastry Shop was set up, five years ago, baker Rothchild says he fell right in line with the theme.

Refrigerated Display Case Began the Plan

He began with a refrigerated display case for whipped cream cakes, ice cream cakes, a long list of custard and whipped cream specialties, all of which, he claims, have become favorites with customers. With insufficient refrigerated storage space

however, he felt that the new field of sub-zero storage offered high promise.

After some investigation, Rothchild worked out a plan whereby the bakery "bakes one day ahead," half the production for each day going into the refrigerated storage boxes, the other half to the display cases. Then, as fresh goods in the display cases are sold, the refrigerators provide back-up stock. If sales are light and it isn't necessary to remove the refrigerated stock, it goes into the cases for later use, Rothchild explained.

N. C. Firm Chartered

CHARLOTTE, N. C.—Brumley Refrigeration, Inc. here has been granted a charter by Secretary of State Thad Eure.

Authorized capital stock is \$50,000. Fred Brumley, Andrew Bolynn, and W. M. Nicholson, all of Charlotte, were listed as incorporators.

N. Y. State Survey

Shows Space Allotment of Items Can Be Key to Grocer's Profits

NEW YORK CITY — Independent retail grocers might profit from a second look at their merchandising and display practices, a recent study indicates.

According to a study of more than 300 upstate New York independent grocery stores, the amount of space allotted to each item can hold the key to the store's profits.

Some of the smaller grocers, it was found, are wasting display space on low-profit items and are forced to scrimp on display space for high-profit ones.

Of the thousands of items sold in independent stores, beer, bread, and soft drinks were the biggest profitmakers.

In the Rochester area it was

found that an average of 27 sq. ft. of floor and shelf space was given over to beer. Each foot provided dealers with a gross profit of \$2.43.

On the other hand, 21 sq. ft. of space was devoted to cereals, although retailers received only about 12 cents a week in profits for each foot of space.

Beer and soft drinks are impulse-buy items, according to survey. Fifty-eight of every 100 customers who purchased soft drinks said they did so without planning it. Beer was bought on impulse in 44 of 100 cases.

A half-hour motion picture based on the study will be shown at 45 regional meetings which are planned for independent grocers throughout the state.

Now! YOU CAN SELL EVERY ICE USER

with America's Only Complete Line of

AUTOMATIC ICE MACHINES!

HERE'S WHY AS A SCOTSMAN DEALER YOU ARE GUARANTEED MORE PROFIT...

- You make more sales, because you can offer a particular model for every ice need!
- You build more sales volume... attractive user prices eliminate cost objections!
- You keep more profit... your profit arrangement is liberal!

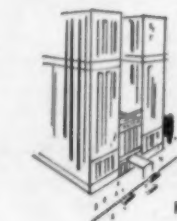
- You are free from service worries... Scotsman machines are dependable... proved by the thousands!
- You avoid installation grief... a Scotsman machine is simplicity itself, lowest installation cost there is!
- You are backed by the industry's most powerful national advertising program, plus local promotion plans!

When you add these benefits up, you can't miss the conclusion to go Scotsman!

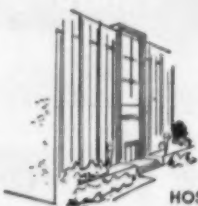
And what a boost you'll get from user reaction to Scotsman Ice! Scotsman Cubes are not shaped by accident. They are formed in their perfect contours after long research by Scotsman engineers to find the most useful, most admired ice cube shape. Scotsman found it, and then designed machines to make it. Big, solid, round, crystal-clear, 100% pure... there's no cube so universally popular as the Scotsman Cube!

For users who require "crushed" ice, Scotsman Super Flakers produce individual bits of hard, pure ice, free-flowing and easy to handle. Scotsman crushed ice is the most economical ice in the world!

Look at part of the Scotsman line shown below, and write immediately to get complete franchise information.



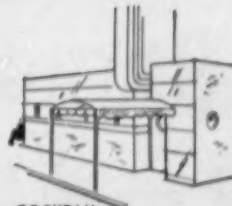
HOTELS



HOSPITALS



RESTAURANTS



COCKTAIL LOUNGES



DINERS AND DRIVE-INS



SODA FOUNTAINS

SCOTSMAN

Super Cubers • Super Flakers



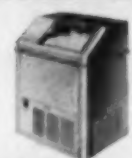
Model SC-100 Super Cuber. Produces up to 110 lbs. daily.



Model SC-200 Super Cuber. Produces up to 225 lbs. daily.



Model SC-500 Super Cuber. Produces up to 500 lbs. daily.



Model SF-75WSA Super Flaker, with storage bin. Produces up to 250 lbs. daily.



Model SF-1WSE Super Flaker, with storage bin. Produces up to 350 lbs. daily.



Model SF-2WSE Super Flaker, with storage bin. Produces up to 550 lbs. daily.



Model SF-3WSE Super Flaker, with storage bin. Produces up to 1050 lbs. daily.



Model SF-1E "continuous flow" Super Flaker. Up to 350 lbs. daily.



Model SF-2E "continuous flow" Super Flaker. Up to 550 lbs. daily.



Model SF-3E "continuous flow" Super Flaker. Up to 1050 lbs. daily.

Every Scotsman Ice Machine operates on standard electrical outlets.



WRITE FOR THE NAME OF YOUR NEAREST SCOTSMAN DISTRIBUTOR

AMERICAN GAS MACHINE CO.

DIVISION QUEEN STOVE WORKS, INC.
205 Front Street • Albert Lea, Minnesota

2 Air-to-Air Year-Round Heat Pump Conditioning Systems Answer Dentist's Desire for Using Little Space, No Stack

RICHMOND, Va.—One of the many advantages of the heat pump often cited by its advocates is the fact that it can do away with the need for a chimney. This year-round air conditioning system creates no products of combustion, of course, so no chimney is necessary with it.

This was one of the arguments that convinced Dr. S. Elmer Bear, oral surgeon, in favor of the heat pump for his new offices and dental clinic here.

Ultra-modern, this one-story building, which also houses a doctor's office, is located on Monument Ave., a Richmond boulevard famous for its monuments and fine old homes. Most



TO AVOID "short cycling" air between the two heat pump air conditioning units installed in Dr. S. Elmer Bear's oral surgery clinic and physician's office next door, discharge grilles in the outside wall were set at 45° angles in opposite directions from each other, so the air is sent in opposite directions down the narrow alleyway behind the building.

of the latter are three stories high.

"I wanted to have heating and air conditioning in as little space as possible," explains Dr. Bear. "We couldn't use oil because that would have meant an unsightly three-story stack. Even gas would have required a two-story stack."

A heat pump installation by Enterprise Heating & Air Conditioning Corp., Westinghouse engineering distributor for Richmond, proved the answer.

Actually, two separate systems were installed. A 5-ton Westinghouse air-to-air heat pump provides year-round air conditioning for Dr. Bear's own offices and clinic while a 3-ton system handles the doctor's office.

One problem of this installation which gave Tom Kriete, head of Enterprise, some concern, was that there was only 3 ft. clearance between Dr.

Bear's building and the nextdoor building on one side—the side the heat pumps had to go in.

To avoid "short cycling" of air between the two units, the discharge grilles in the outside walls were set at 45° angles in opposite direction from each other, so the air is sent in opposite directions down the narrow alleyway.

Kriete, whose firm has made a number of heat pump installations in the area, offers this interesting comment:

"We're always surprised how quickly we finish a heat pump installation," he says. "You simply set the unit, tie in the ductwork and electrical connections, and you're ready. On conventional year-round jobs, you also have to put in an oil tank, say, install a cooling tower, and run water lines."

Bottling Plant Milk Processing Area To Be Fully Air Conditioned

PHILADELPHIA—Air conditioning for the complete milk processing area of a new milk bottling plant in Camden, N. J. is planned by the Ballinger Co., Philadelphia architect commissioned to design the building.

The plant will have an initial storage capacity of 36,000 gals. to provide milk for 84 retail delivery routes and 14 wholesale and store delivery routes in the south Jersey area. Provisions will be made to accommodate an additional 24,000 gals. should the need arise.

The plant will be owned by Supplee Wills Jones Milk Co., distributor of Sealtest dairy products. Ground is expected to be broken this spring with completion scheduled for May, 1957.

As a floor space saving measure, stainless steel milk storage tanks will be bulkheaded into the pasteurizing room on the second floor, so only the tank faces will be inside the building. Eight tanks will be installed.

Milk arriving in insulated stainless steel tank trucks will be inspected, tested, and pumped through stainless steel lines to the refrigerated storage tanks. From here it will go through pasteurizing, homogenizing, and cooling equipment prior to bottling.

After it is bottled in glass or paper containers, the milk will be conveyed to refrigerated rooms and made up into individual orders or loaded directly onto refrigerated trailers.

All wholesale delivery trucks and trailers will be refrigerated, according to a Sealtest spokesman.

Detroit May Condition Traffic Courts, Offices

DETROIT — Mayor Albert Cobo said recently he would tentatively approve an expenditure of \$170,000 for air conditioning courtrooms and offices in the old County building.

Traffic Judges John D. Watts and George T. Murphy had pointed out to Cobo that the only air conditioned rooms in the building are the police assembly room and the prisoner bullpen.

City engineers estimated it would cost \$750,000 to air condition the building, \$170,000 for just courtrooms and offices.

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Text of Trade Practice Rules for the Refrigeration and/or Air Conditioning Contracting Industries

THE RULES

These rules promulgated by the Commission are designed to foster and promote the maintenance of fair competitive conditions in the interest of protecting industry, trade, and the public. It is to this end, and to the exclusion of any act or practice which fixes or controls prices through com-

See Story on Page 1

bination or agreement, or which unreasonably restrains trade or suppresses competition, or otherwise unlawfully injures, destroys, or prevents competition, that the rules are to be applied.

GROUP I

The unfair trade practices embraced in the rules herein are considered to be unfair methods of competition, unfair or deceptive acts or practices, or other illegal practices, prohibited under laws administered by the Federal Trade Commission; and appropriate proceedings in the public interest will be taken by the Commission to prevent the use, by any person, partnership, corporation, or other organization subject to its jurisdiction, of such unlawful practices in commerce.

APPLICABILITY OF THE RULES

The rules have application to persons, firms, corporations, and organizations engaged in the sale and installation of:

- (1) Mechanical refrigeration units or systems for commercial or industrial use; or
- (2) Mechanical air conditioning units or systems for commercial, industrial, or home use.

(Note 1: As above used, the word "installation" makes reference to services the performance of which requires engineering knowledge and skill. Thus, window air conditioning units and mechanical refrigeration units which are of such size and type as to require but a "plug in" to an established electric power system are not to be considered as products to which these rules have application.)

(Note 2: As above used, the words "air conditioning units or systems" make reference to units or systems which are either capable of lowering, or of both lowering and raising, the

temperature of the air within an enclosure and simultaneously effecting a substantial degree of control of the humidity and circulation of the air in such enclosure. Units or systems which are designed to raise, but not lower, the temperature of air within an enclosure are not products to which these rules have application.

Note 3: The above is to be construed as definition of the nature of activities to which the rules have application and is not intended as definition of the kind of products which may be designated "air conditioners" or "refrigeration units or systems.")

RULE 1—DECEPTION (GENERAL)

In connection with the sale and installation of industry products, it is an unfair trade practice to use, or cause or promote the use of, any trade promotional literature, advertising matter, mark, brand, label, or device, or any other type of oral or written representation, which has the capacity and tendency or effect of deceiving purchasers or prospective purchasers as to the construction, design, model, origin, manufacture, quality, absence of noise in operation, strength, durability, life expectancy, utility, cost of operation, or safety of such products, or of their capacity to cool or refrigerate, or in any other material respect; or to mislead purchasers or prospective purchasers with respect to the need for repair, maintenance, or replacement of parts of such products after their purchase and use, or with respect to any services offered concerning maintenance of the products.

RULE 2—GUARANTEES, WARRANTIES, ETC.

In the sale, offering for sale, or installation of industry products, it is an unfair trade practice to use, or cause to be used, any guarantee or warranty which is false, misleading, deceptive, or unfair to the purchasing or consuming public, whether in respect to quality, construction, serviceability, or performance of any industry product.

(a) The foregoing prohibitions of this rule are to be considered as applicable with respect to any guarantee or warranty in which the terms and conditions relating to the obligation of the guarantor or warrantor are

impractical of fulfillment.

(b) It is also an unfair trade practice to make or offer any guarantee or warranty respecting an industry product unless the nature and extent of the undertaking, and any and all material conditions and limitations applicable thereto, are clearly and conspicuously stated in immediate conjunction therewith, and unless the obligations of the guarantor or warrantor with respect to the guarantee or warranty are scrupulously fulfilled.

RULE 3—PROHIBITED

DISCRIMINATION.1

I. Prohibited Discriminatory Prices, or Rebates, Refunds, Discounts, Credits, Etc., which Effect Unlawful Price Discrimination. It is an unfair trade practice for any industry member engaged in commerce, in the course of such commerce, to grant or allow, secretly or openly, directly or indirectly, any rebate, refund, discount, credit, or other form of price differential, where such rebate, refund, discount, credit, or other form of price differential, effects a discrimination in price between different purchasers of goods of like grade and quality, where either or any of the purchases involved therein are in commerce, and where the effect thereof may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination, or with the customers of either of them: **Provided, however—**

(a) That the goods involved in any such transaction are sold for use, consumption, or resale within any place under the jurisdiction of the United States;

(b) That nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered;

(Note: This proviso shall not be construed as permitting an industry member to allow a price differential to a customer, whether in the form of a quantity price discount, rebate, or other form, through billing as a single order an aggregate of the amount of two or more orders of such customer on which the industry member makes separate deliveries, when the price differential allowed is not based on a net savings in cost of manufacture, sale, or delivery of the products to said customer resulting from the different method and quantity in which the products are sold and delivered to said customer, or is more than due allowance for such net savings; nor is this proviso to be construed as permitting an industry member to allow a price differential to a customer, whether in the form of a quantity price discount, rebate, or other form, when, pursuant to agreement or understanding by the industry member and the customer, delivery of the products purchased is to be delayed or made in instalments so as to involve storage cost to the industry member, and when as a result of such cost or otherwise, the price differential allowed is not based on a net savings in cost of manufacture, sale, or delivery of the products to said customer resulting from the different method and quantity in which the products are sold and delivered to said customer, or is more than due allowance for such net savings.)

(c) That nothing herein contained shall prevent persons engaged in selling goods, wares, or merchandise in commerce from selecting their own customers in bona fide transactions and not in restraint of trade;

(d) That nothing herein contained shall prevent price changes from time to time where made in response to changing conditions affecting the market for or the marketability of the

1. As used in Rule 3, the word "commerce" means "trade or commerce among the several States and with foreign nations, or between the District of Columbia or any Territory of the United States and any State, Territory, or foreign nation, or between any insular possessions or other places under the jurisdiction of the United States, or between any such possession or place and any State or Territory of the United States or the District of Columbia or any foreign nation, or within the District of Columbia or any Territory or any insular possession or other place under the jurisdiction of the United States."

goods concerned, such as but not limited to obsolescence of seasonal goods, distress sales under court process, or sales in good faith in discontinuance of business in the goods concerned.

II. Prohibited Brokerage and Commissions. It is an unfair trade practice for any industry member engaged in commerce, in the course of such commerce, to pay or grant, or to receive or accept, anything of value as a commission, brokerage, or other compensation, or any allowance or discount in lieu thereof, except for services rendered in connection with the sale or purchase of goods, wares, or merchandise, either to the other party to such transaction or to an agent, representative, or other intermediary therein where such intermediary is acting in fact for or in behalf, or is subject to the direct or indirect control, of any party to such transaction other than the person by whom such compensation is so granted or paid.

III. Prohibited Advertising or Promotional Allowances, Etc. It is an unfair trade practice for any industry member engaged in commerce to pay or contract for the payment of advertising or promotional allowances or any other thing of value to or for the benefit of a customer of such member in the course of such commerce as compensation or in consideration for any services or facilities furnished by or through such customer in connection with the processing, handling, sale, or offering for sale of any prod-

ucts or commodities manufactured, sold, or offered for sale by such member, unless such payment or consideration is available on proportionally equal terms to all other customers competing in the distribution of such products or commodities.

IV. Prohibited Discriminatory Services or Facilities. It is an unfair trade practice for any industry member engaged in commerce to discriminate in favor of one purchaser against another purchaser or purchasers of a commodity bought for resale, with or without processing, by contracting to furnish or furnishing, or by contributing to the furnishing of, any services or facilities connected with the processing, handling, sale, or offering for sale of such commodity so purchased upon terms not accorded to all competing purchasers on proportionally equal terms.

V. Inducing or Receiving an Illegal Discrimination in Price. It is an unfair trade practice for any industry member engaged in commerce, in the course of such commerce, knowingly to induce or receive a discrimination in price which is prohibited by the foregoing provisions of this Rule 3.

VI. Exemptions. The prohibitions of this Rule 3 shall not apply to purchases of their supplies for their own use by schools, colleges, universities, public libraries, churches, hospitals, and charitable institutions not operated for profit.

(Note: In complaint proceedings

(Concluded on next page)

NATIONAL LOCK refrigerator hardware

for • DOMESTIC • COMMERCIAL
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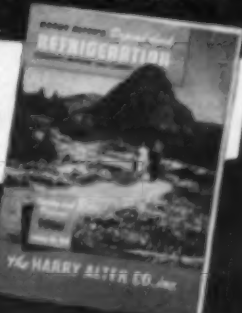
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Trade Practice Rules--

(Concluded from preceding page)

charging discrimination in price or services or facilities furnished, and upon proof having been made of such discrimination, the burden of rebutting the prima facie case thus made by showing justification shall be upon the person charged; and unless justification shall be affirmatively shown, the Commission is authorized to issue an order terminating the discrimination: **Provided, however,** That nothing herein contained shall prevent a seller rebutting the prima facie case thus made by showing that his lower price or the furnishing of services or facilities to any purchaser or purchasers was made in good faith to meet an equally low price of a competitor, or the services or facilities furnished by a competitor. See Sec. 2-b, Clayton Act.)

RULE 4—SUBSTITUTION OF PRODUCTS.

It is an unfair trade practice to make an unauthorized substitution of products, where such a substitution has the capacity and tendency or effect of misleading or deceiving the purchasing or consuming public, by—

(a) Shipping, delivering, or installing industry products which do not conform to samples submitted, to specifications upon which the sale is consummated, or to representations made prior to securing the order, without advising the purchaser of the substitution and obtaining his consent thereto prior to making shipment or delivery; or

(b) Falsely representing the reason for making a substitution.

RULE 5—MISREPRESENTING PRODUCTS AS CONFORMING TO STANDARD.

In connection with the sale or offering for sale of industry products, it is an unfair trade practice to represent, through advertising or otherwise, that such products conform to any standards recognized in or applicable to the industry when such is not the fact.

(Note: Illustrative of the type of misrepresentation inhibited by this rule is the practice of an industry member advertising or otherwise claiming that a product has been approved

by a governmental authority or private agency, or meets certain specifications or standards, when in fact the product has not been so approved or does not meet the certain specifications or standards.)

RULE 6—DECEPTIVE PRICES.

The publishing or circulating of false or misleading price quotations, price lists, or terms or conditions of sale, with the capacity and tendency or effect of misleading or deceiving purchasers or prospective purchasers, is an unfair trade practice.

It is also an unfair trade practice to make or publish, directly or indirectly, any false, misleading, or deceptive statements or representations, through advertising or otherwise, concerning installment sales contracts used or their terms and conditions, including down payments, interest, carrying charges, etc., or respecting any other matters relative to such contracts or their terms and conditions.

RULE 7—MISREPRESENTATION AS TO CHARACTER OF BUSINESS.

It is an unfair trade practice for any industry member, in the course of or in connection with the sale and installation of industry products, to represent, directly or indirectly, that he is an air conditioning or refrigeration contractor when such is not the fact; or in any other manner to misrepresent the character, extent, or type of his business.

RULE 8—INDUCING BREACH OF CONTRACT.

Knowingly inducing or attempting to induce the breach of existing lawful contracts between competitors and their customers or their suppliers, or interfering with or obstructing the performance of any such contractual duties or services, under any circumstance having the capacity and tendency or effect of substantially injuring or lessening present or potential competition, is an unfair trade practice.

Nothing in this rule is intended to imply that it is improper to solicit the business of a customer of a competing industry member; nor is the rule to be construed as in anywise authorizing any agreement, understanding, or

planned common course of action by two or more industry members not to solicit business from the customers of either of them or from customers of any other industry member.

RULE 9—PROHIBITED SALES BELOW COST.

The practice of selling products of the industry at a price less than the cost thereof to the seller, with the purpose or intent, and where the effect is, or where there is a reasonable probability that the effect will be, to substantially injure, suppress, or stifle competition or tend to create a monopoly, is an unfair trade practice.

This rule is not to be construed as prohibiting all sales below cost, but only such selling below the seller's cost as is resorted to and pursued with the wrongful intent or purpose referred to and where the effect is, or where there is reasonable probability that the effect will be, to substantially injure, suppress, or stifle competition or to create a monopoly. Among the situations in which the requisite purpose or intent would ordinarily be lacking are cases in which such sales were: (a) of seasonal goods near the conclusion of the season; (b) of perishable goods in respect to which deterioration is imminent; (c) of obsolescent goods; (d) made under judicial process; or (e) made in bona fide discontinuance of business in the goods concerned.

As used in the foregoing paragraphs of this rule, the term "cost" means the respective seller's cost and not an average cost in the industry whether such average cost be determined by an industry cost survey or some other method. It consists of the total outlay or expenditure by the seller in the acquisition, production, and distribution of the products involved, and comprises all elements of cost such as labor, material, depreciation, taxes (except taxes on net income and such other taxes as are not properly applicable to cost), and general overhead expenses, incurred by the seller in the acquisition, manufacture, processing, preparation for marketing, sales, delivery, and installation of the products. Not to be included are dividends or interest on borrowed or invested capital, or non-operating losses, such as fire losses and losses from the sale or exchange of capital assets. Operating cost should not be reduced by items or nonoperating income, such as income from investments, and gain on the sale of capital assets.

Nothing in this rule shall be construed as relieving an industry member from compliance with any of the requirements of the Robinson-Patman Act.

RULE 10—COMMERCIAL BRIBERY.

It is an unfair trade practice, directly or indirectly, to give, or offer to give, or permit to cause to be given, money or anything of value to agents, employees, or representatives of customers or prospective customers, or to agents, employees, or representatives of competitors' customers or prospective customers, without the knowledge of their employers or principals, as an inducement to influence their employers or principals to purchase or contract to purchase products sold and installed by such industry member or the maker of such gift or offer, or to influence such employers or principals to refrain from dealing in the products of competitors or from dealing or contracting to deal with competitors.

RULE 11—ENTICING AWAY EMPLOYEES OF COMPETITORS.

It is an unfair trade practice wilfully to entice away employees or sales representatives of competitors with the intent and effect of thereby unduly hampering or injuring competitors in their business and destroying or substantially lessening competition: **Provided,** That nothing in this rule shall be construed as prohibiting employees from seeking more favorable employment, or as prohibiting employers from hiring or offering employment to employees of competitors in good faith and not for the purpose of injuring, destroying, or preventing competition.

RULE 12—DECEPTION AS TO USED OR REBUILT PRODUCTS.

(a) It is an unfair trade practice to represent, directly or indirectly, that any industry product or part thereof is new, unused, or rebuilt, when such is not the fact.

(b) In the marketing of industry products which are second-hand or rebuilt, or which contain second-hand or rebuilt parts, it is an unfair trade practice to fail to make full and nondeceptive disclosure, by a conspicuous tag or label firmly attached to the products, and in all advertising and promotional literature relating thereto, of the fact—

(1) that such products are second-hand, rebuilt, or contain second-hand or rebuilt parts, as the case may be, when such products have the appearance of being new; or

(2) that the rebuilding or rebuilt products was done by other than the original manufacturer, when such is the case.

RULE 13—DEFAMATION OF COMPETITORS OR FALSE DISPARAGEMENT OF THEIR PRODUCTS.

The defamation of competitors by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or by other false representations, or the false disparagement of competitors' products in any respect, or if their business methods, selling prices, values, credit terms, policies, or services, is an unfair trade practice.

RULE 14—EXCLUSIVE DEALS.

It is an unfair trade practice to contract to sell or sell any industry product, or fix a price charged therefor, or discount from, or rebate upon, such price, on the condition, agreement, or understanding that the purchaser thereof shall not use or deal in the products of a competitor or competitors of such industry member, where the effect of such sales or contract for sale or of such condition, agreement, or understanding, may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

RULE 15—PROHIBITED FORMS OF TRADE RESTRAINTS (UNLAWFUL PRICE FIXING ETC.)

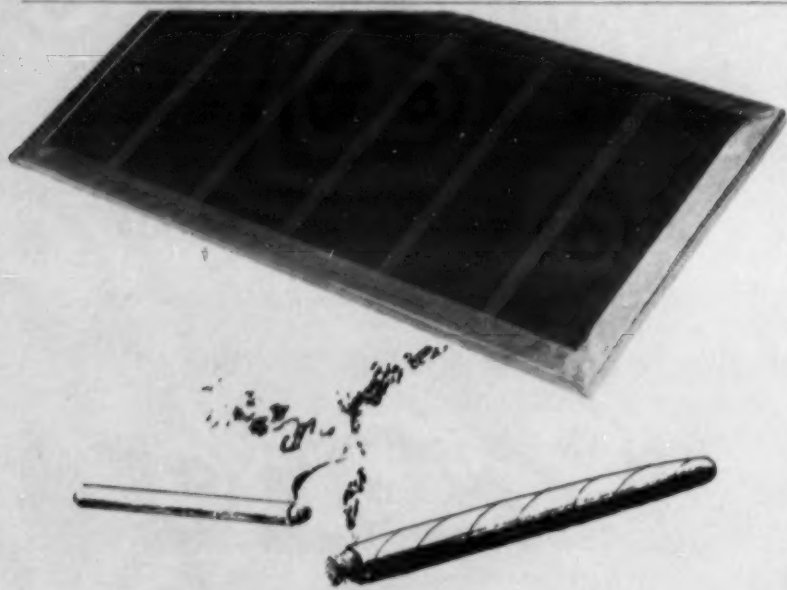
It is an unfair trade practice, either directly or indirectly, to engage in any planned common course of action, or to enter into or take part in any understanding, agreement, combination, or conspiracy, with one or more industry members, or with any other person or persons, to fix or maintain the price of any goods or otherwise unlawfully to restrain trade; or to use any form of threat, intimidation, or coercion to

induce any member of the industry or other person or persons to engage in in any such planned common course of action, or to become a party to any such understanding, agreement, combination, or conspiracy.

Promulgated by the Federal Trade Commission May 8, 1956.

Robert M. Parrish,
Secretary

2/The inhibitions of this rule 15 are subject to Public Law 542, approved July 14, 1952 - 66 Stat. 632 (the McGuire Act) which provides that with respect to a commodity which bears, or the label or container of which bears, the trade-mark, brand, or name of the producer or distributor of such commodity and which is in free and open competition with commodities of the same general class produced or distributed by others, a seller of such a commodity may enter into a contract or agreement with a buyer thereof which establishes a minimum or stipulated price at which such commodity may be resold by such buyer when such contract or agreement is lawful as applied to intrastate transactions under the laws of the State, Territory, or territorial jurisdiction in which the resale is to be made or to which the commodity is to be transported for such resale, and when such contract or agreement is not between manufacturers, or between wholesalers, or between brokers, or between factors, or between retailers, or between persons, firms, or corporations in competition with each other.



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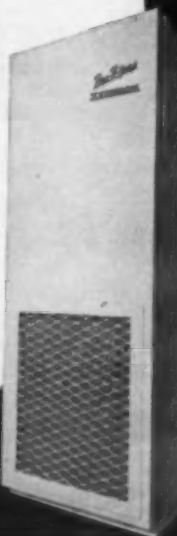
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The terms "Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

Servicing Automobile Air Conditioners

BY C. DALE MERICLE

This is the first instalment describing the air conditioning system installed in Plymouth cars.

Makes previously discussed have included A.R.A., Frigikar, Automotive Air Conditioning, Pivot, Novi, Oldsmobile, Buick, Pontiac, Chevrolet, Ford, Nash, Mark IV, Mobil-Aire, Lincoln-Mercury, and Chrysler.

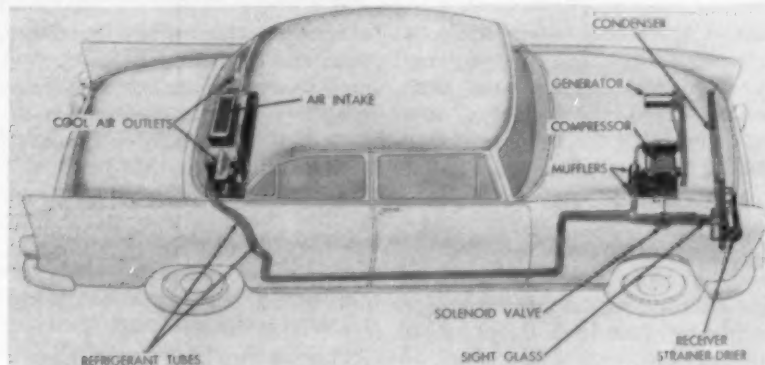


FIG. 1—Air conditioning system employed by Plymouth is similar to that used by other Chrysler Corp. car divisions, but there are some differences.

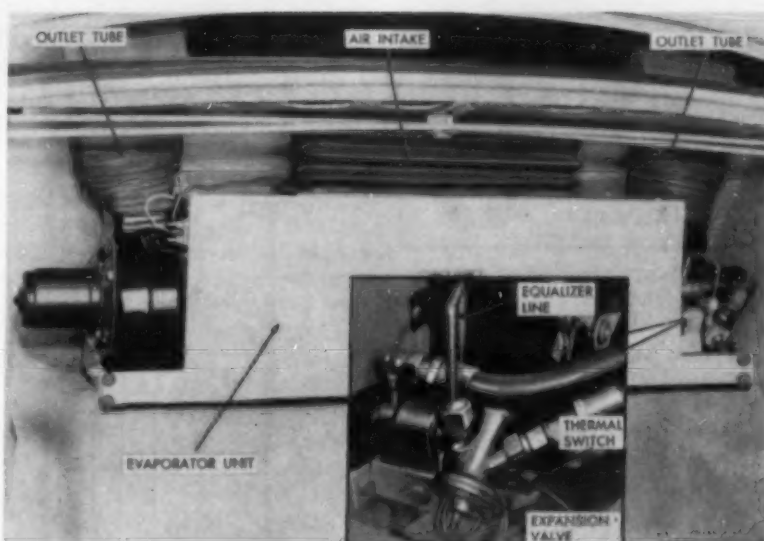


FIG. 2—This is the evaporator assembly used by Plymouth. Inset shows expansion valve and thermal switch.

glass is the same in the Plymouth system as in the Chrysler air conditioner.

Evaporator

Evaporator-blower assembly

equipped with external equalizer, thermostatic switch to control by-pass solenoid valve, and filters.

Blowers are located at each side of the evaporator housing, and are outside the housing proper.

Return air is brought to the evaporator housing through a grille located in the center of the package tray behind the rear seat. Conditioned air is discharged into the car interior through outlets on each side of the package tray.

There is no provision for outside air in the Plymouth system.

(To Be Continued)

Nick & Pfister Incorporates

AUSTIN, Texas — Nick & Pfister Air Conditioning has recently been incorporated in San Antonio. Incorporators were Charles L. Pfister, Bernice Nichols, and Durward L. Nichols.

PLYMOUTH (1)

Plymouth Div.
Chrysler Corp.
Detroit 31, Mich.

DESCRIPTION

Air conditioning system offered by Plymouth Div. as a factory or field-installed optional accessory on 1955 and 1956 models has the components located conventionally.

As shown in Fig. 1, compressor is mounted on the car engine and is belt-driven off the crankshaft. Condenser is in front of the radiator. Evaporator-blower assembly is in the luggage compartment.

(With a few exceptions, the Plymouth air conditioning system is essentially the same as that used by Chrysler Div., which was described in detail in the articles immediately preceding this one. This discussion of the Plymouth system, therefore, will be limited to a brief description with emphasis on the differences between the Plymouth and Chrysler systems.)

Refrigerant is "Freon-12." Charge is 4 lbs.

Compressor

Plymouth uses the same compressor as Chrysler, a Tecumseh two-cylinder, reciprocating type automotive compressor installed horizontally.

No magnetic clutch is employed on the Plymouth system.

Suction service valve is attached to the inlet side of compressor. Discharge service valve is in the hot gas discharge line at the inlet side of the condenser.

Condenser

Arrangement of condenser, receiver-filter-drier, by-pass line, solenoid by-pass valve, and sight



Model V-93 Automotive Air Conditioning Compressor

When Old Sol again starts to blister the highways and streets, the coolest cars on the road will be sporting America's 'hottest' air conditioning compressor — Lehigh's Model V-93. This pint size giant, designed and built for this one purpose only, can operate with gyroscopic smoothness at 6000 RPM and can produce up to three (3) tons of refrigeration. The fabulous V-93 was conceived and developed by Lehigh engineers working in close cooperation, for more than two years, with America's leading automobile manufacturers and air conditioning specialists. Among its major construction and

engineering features are: Gear pump, forced feed lubrication to all moving parts. Forged steel crankshaft counter-balanced to 1/4 inch ounce. Die-cast aluminum connecting rods and pistons. Aluminum alloy heads. Assembly to $\pm .0002$ — a tolerance which is closer than that of a fine automobile engine. SIZE — only 7 1/2" high — to fit under the hood of modern cars — 9 1/4" long and 8 1/2" wide. WEIGHT — only 31 1/2 lbs. including service valves and oil charge. The LEHIGH TEAM is rightly proud of this 'baby' and will be glad to send you additional engineering data.



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Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



Latent Heat Source For Hot-Gas Defrosting (1)

From April 7 to June 16, 1952, we ran a series in this column entitled "Automatic Defrosting." (This series will appear in Manual J-7 which with J-6 is scheduled for publication in the near future). A number of methods of defrosting were described, electric defrost, water defrost, and several types of hot-gas defrosting. Since then,

there have been some developments that very well merit discussion, one of which is to be described in this issue.

Those who read the above mentioned series of articles will perhaps recall that in the discussion of hot-gas defrosting, two weaknesses were emphasized.

1. The tendency for the system to "run out of heat."
2. The danger of slug-backs of liquid refrigerant to the compressor, particularly just after the termination of the defrost cycle.

These two undesirable features are inherent in the simple

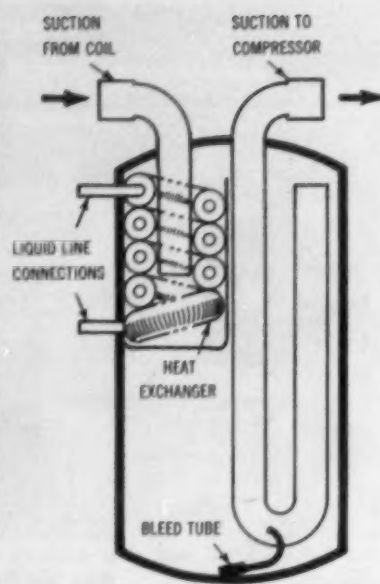


FIG. 1—An accumulator with a liquid "injector" and built-in heat exchanger.

hot-gas defrost method, but may be corrected by various devices employed by different manufacturers, and which were discussed in the above mentioned series. For those readers who do not recall the hot-gas defrost cycle, the following is a brief review.

Hot-gas defrosting depends on the fact that the compressed gas from the head of the compressor is normally hot when it enters the condenser. What then, is more reasonable and simple than to by-pass the condenser and feed this hot-gas directly into the low-temperature evaporator, which has accumulated a heavy coating of frost and ice. The heat is applied to the inside of the evaporator, so defrosting is outward; in fact, the frost and ice may melt loose and drop off without having to be completely melted.

However, the evaporator is quite cold—say 0°—so much of the hot gas condenses in it and stays there as a liquid. Some goes on back to the compressor, but as defrosting progresses, the amount going back to the compressor becomes less and less; that is, the amount of refrigerant being circulated decreases as the hot-gas defrosting progresses. Since the refrigerant circulated is the carrier and source of the heat, the rate of defrosting decreases also.

Several means of maintaining a source of heat are employed by manufacturers of various types of hot-gas defrost systems. One method is using the hot-gas during the refrigeration cycle to heat a liquid known as a heat-bank and then draw on this stored heat during the defrost cycle.

Another method is to heat the suction gas by room air (the re-evaporator method) or electrically during the defrost cycle. Both of these methods also tend to prevent slugging, since any liquid that is stopped over from the evaporator, is vaporized in the suction line, and is thus prevented from reaching the compressor as a liquid.

A VAPOR DEFROST SYSTEM

A unique and quite effective method has recently made its appearance. It is known as "Vapomatic" (by Recold), which name describes it somewhat better than the term "hot-gas" defrosting, for in this method, the so-called "hot-gas"

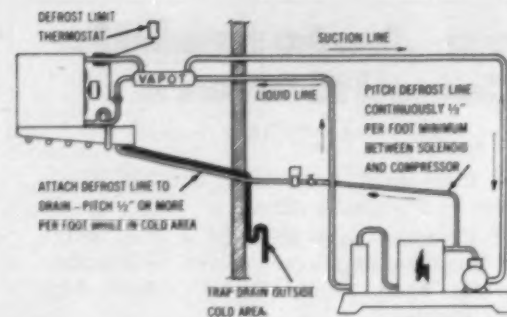


FIG. 2—Connections for the vapor type defrost system are the same as for other "hot gas" defrosting systems.

line is quite cool—very little, if any, above condensing temperature. In the installations that we inspected, the "hot-gas" line actually felt cool to our fingers during the defrost cycle.

This is distinctly an advantage, for the "hot-gas" line, being about room temperature, does not lose heat to the room air rapidly, and may be run a couple of hundred ft. or more uninsulated, with little effect on the rate of defrosting.

The heart of the system is the "Vapot," an accumulator which is equipped with a "Bleed tube" as shown in Fig. 1. A liquid-to-suction line heat exchanger is also built into the Vapot, which improves efficiency during the refrigeration cycle but is not essential to the defrost operation.

The Vapot, like other accumulators, is mounted at the outlet of the evaporator coil, as shown in Fig. 2. However, in Fig. 2, the Vapot shown is the horizontal type, which, for construction advantages, is used on two-fan models, whereas the vertical type shown in Fig. 1, is used on one-fan models. There is no essential design difference between the vertical and horizontal types, however.

During the refrigeration cycle, the operation is much the same as with other systems using evaporators equipped with accumulators. Liquid refrigerant is sub-cooled in the heat exchanger in the Vapot, and is fed to the thermostatic expansion valve cold, thereby assuring a high net refrigerating effect of the liquid refrigerant during the refrigeration cycle.

The expansion valve has a normal adjustment of 8 to 10° of superheat, controlled by the feeler bulb at the outlet of the coil, in the line leading into the heat exchanger in the Vapot. There will usually be some accumulation of a small amount of liquid refrigerant and oil in the small cup surrounding the heat exchanger, as the expansion valve tends to open and close.

Also there will be a small accumulation of liquid and oil in the Vapot itself, but this is vaporized and passes out through the U tube back to the compressor.

In addition, some of the liquid and oil in the Vapot is picked up by the Bleed tube and fed into the suction vapor in the U Tube, thus assuring effective oil return.

(To Be Continued)

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"How do I know? Quite simple, really. The condenser, located behind the flywheel instead of the motor, clearly establishes this 1/4 H.P. sulphur dioxide unit as one of the first Curtis condensing units, circa 1922."

"Besides, I'm not really Sherlock Holmes. I'm Hy Jarvis, curator of the museum and I'd like very much to locate one of these units."

"If you have any information about one of these units, please write me. If you have the unit in your possession and donate it to the museum your name will be inscribed on a permanent plaque mounted on the unit."

"Or if you have information about any material suitable for the museum, I'd like to hear from you. The Recold Museum is for the benefit of everyone in the industry."

Recold Museum OF AIR CONDITIONING AND REFRIGERATION EQUIPMENT
Refrigeration Engineering, Inc.
7250 East Slouson Avenue, Los Angeles 22, California

ARI Campaigns To Give Effect to Standards--

(Continued from Page 1, Col. 5) portedly named a committee whose job it will be to (1) get a maximum number of manufacturers to rate their room air conditioners under ARI standards; (2) to draft a pledge for adoption by manufacturers that they will observe and publish such ratings; (3) to develop a program for the effective publicizing of the meaning of these ratings to the public.

"Our industry has an obligation to present to the public honest products, honestly rated, priced, and advertised," said incoming President Lawler in his inaugural speech.

"Some companies in the industry are misleading the public with extravagant claims, creating dissatisfied customers, and so impeding progress.

Reaction to Editorials

"George Taubeneck's editorials in AIR CONDITIONING & REFRIGERATION NEWS have called attention to what may happen to the public's confidence in our products, and to the progress of the industry, if something is not done to clear up this problem of ratings. The response of readers of the NEWS to this thinking, as demonstrated in the letters-to-the-editors column, shows how intensely dealers and contractors feel about this matter.

Make Symbol Mean Something

"We must make the ARI symbol mean something to the buying public and to the dealer who sells and applies our products. In these areas of providing an honest product, honestly rated, and honestly advertised, ARI has an opportunity to assume this position of industry leadership by coming up with an

aggressive and well thought-out program. I am determined that when I come before you a year from now that I can report to you that ARI has such a program and is moving up on the objective."

Retiring ARI President James Emmett, Jr. of the Jas. P. Marsh Corp., in his annual report, also touched on the matter of standards, pointing out that since the last annual meeting, ARI has published nine new or revised standards, giving the association a total of 37 published, and 13 proposed, standards.

"It would seem that we have standards for nearly every product and purpose, but certainly we are not satisfied with the degree to which the industry is using these standards, nor are we satisfied to the degree to which the public has been informed that such standards exist."

Enroll 17 New Members

He said that the association had gained 17 new members in the past year, bringing the total to 172 firms.

Emmett pointed out to the growth of the statistical services provided by the association, and hailed the 9th annual Exposition of the Industry, held last November in Atlantic City, as by far the greatest show that the air conditioning and refrigeration industry has ever held. He paid special tribute to the Show Committee and to George Mills, Show Director, for their efforts in making the Show a success.

On relations with other elements in the industry Emmett reported that several product sections will hold meetings in New Orleans in October at the same time as the Air Conditioning and Refrigeration

Wholesalers association is having its annual membership meeting. The ARI is planning a special reception for the ARW membership at the time of the meeting.

Along the same line, the annual meeting of the American Society of Heating & Air Conditioning Engineers (ASHAE) will be held in Washington, D. C., June 18-20, and the ARI will be hosts to the society's officers, directors, and staff members.

Some of the special activities of ARI, and some proposed objectives of the association, were outlined in the report by George S. Jones, Jr., managing director. On these points he stated:

"We spent some of our time with the Public Health Services, Division of the Department of Health Education and Welfare in connection with their approval of water coolers and ice makers for interstate carriers. We have attended hearings at the Federal Trade Commission on fair trade practice rules for the air conditioning and refrigeration contractors industry, and in connection with a complaint filed against a company who misused the word 'air conditioning' to describe a fan blowing over a receptacle containing water.

"We have been working with our ice cream cabinet section in connection with restrictive legislation, actual and proposed, in a great many different areas.

Work with BBB Campaign

"We have met with the Association of Better Business Bureaus in working out a proper program for advertising and promotion of room air conditioners and in regard to a possible film promoting the products of our industry.

"Consultations have been held with the Underwriters' Laboratories in an effort to speed up and improve their listing procedure, which is of interest to practically every product included in our scope. We have talked to many municipal authorities and to other code-making bodies.

"We are furnishing various agencies in the government with information developed by ARI that would answer the many questions they want answered in connection with the air conditioning of government buildings, perhaps \$2 billion worth of business for our industry.

"As we look ahead, there is much to be done. New uses of refrigeration are being developed every day. Many processes, now accepted as routine and commonplace, would be impossible without refrigeration. New products are available only because refrigeration is available.

The Association's Place

"Air conditioning to the purist is both winter and summer control of temperature, humidity, and other factors. But to Mr. John Q. Public, air conditioning means summer comfort, more efficiency in hot weather, and better health in the face of rising temperature, all of which is due entirely and solely to the products built and developed in the refrigeration industry.

"It is no accident that your trade association is known as the Air-Conditioning & Refrigeration

Institute. By its name, your trade association is identified as the trade association servicing the commercial and industrial refrigeration industry and the air conditioning industry. It behooves us to see to it that it serves these purposes adequately."

Proposals for Coming Year

Jones proposed that in the year ahead ARI members give serious thought to the following:

(1) Let us use and promote the standards developed and approved by your product sections. Your retiring president, Jim Emmett, covered this—but its importance justifies repetition. Let us lose no time in the development and promulgation of such standards as are needed but not yet completed.

(2) Let us do a better job of providing statistics on the basis of which we can do an even better job of supplying better products at lower prices to more customers at greater profit to each of us.

(3) Let each of us appoint himself as a committee of one to bring into active participation, as a member of ARI, at least one desirable and eligible manufacturer who is not now contributing to and benefiting by our activities.

(4) Let us place particular

(Concluded on Back Page, Col. 1)

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THE WILLIAMSON CO., 3320-E5 Madison Rd., Cincinnati 9, Ohio

WILLIAMSON Waterless Wethermatic AIRrefrigeration units can be added quickly and easily to any residential or store forced air heating system. Choose from plenum, duct, counterflow, suspended horizontal or console types for efficient low cost operation.

- No water needed
- No sewer or water connections
- No costly maintenance
- Pre-wired for easy installation
- 2, 3, 5 and 7½ ton models
- Full tonnage provided

SCHNACKE THERMATROL CONDENSING UNITS

5 H. P. to 60 H. P.



Illustrated is a four cylinder model used on applications from 10 HP low temperature to 30 HP high temperature.

THERMATROL Capacity Control

The industry's ONLY Capacity Control which accurately controls without unbalancing a balanced compressor, prevents frictional heat in idle cylinders and is simple and trouble free. Proven by over 10 years of actual use. Patented by Schnacke.

Thermatrol Compressors and condensing units meet every specification of modern design for every application from 5 HP to 60 HP, including refrigerant cooled replaceable sleeves, steel backed replaceable rod bearings, forced feed lubrication, balanced forged crankshaft, safety valves and new type inner oil cooled seals.

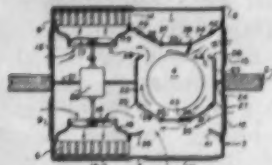
Write for Catalogue.

1103 North Governor St. **SCHNACKE, INC.** Evansville 7, Indiana

PATENTS

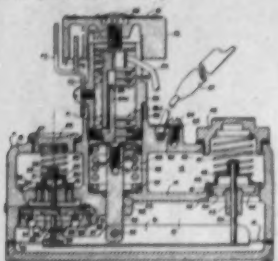
Week of November 22
(Continued)

2,794,947. MULTI-PURPOSE AIR CONDITIONER. Lowell M. Kurtz, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Sept. 22, 1953, Serial No. 231,634. 6 Claims. (Cl. 62-129.)



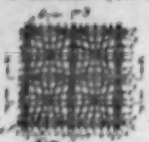
1. In an air conditioning unit of the type adapted to be placed in a wall between the room to be conditioned and the outside atmosphere, a casing having a plurality of openings leading into said room and a plurality of openings leading into said outside atmosphere, a pair of heat exchangers and a compressor mounted in said casing, a first blower means mounted in said casing for creating a flow of outside air through one of said heat exchangers and back to said outside atmosphere, a second blower means mounted in said casing for creating a flow of the room air through the other of said heat exchangers and back to said room, partition means mounted in said casing for effectively separating said air flows, and adjustable baffle means mounted in said casing for selectively directing either one of said air flows over said compressor thereby to allow the heat of said compressor to be absorbed by the selected one of said air flows.

2,794,499. THERMOSTATIC VALVE. Charles D. Coffey, Ingleswood, Calif., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Dec. 29, 1951, Serial No. 264,153. 8 Claims. (Cl. 137-632.)



1. A fluid flow control device comprising a valve body having an inlet and an outlet with a partition therebetween, a small opening in said partition having a first valve seat therearound, a first valve biased toward seating engagement with said first valve seat, a large opening in said partition having a second valve seat therearound, a second valve biased toward said second seat, snap-acting means for actuating said first valve, a first plunger for actuating said snap-acting means, an adjustable stop for said first plunger, a second plunger for actuating said second valve, a lever having a first end in engagement with said first plunger and a second end in engagement with said second plunger, a third plunger pivotally connected at one end thereof to said lever nearer said first plunger than said second plunger, means for biasing said third plunger in a direction to open both valves in sequence, and power means for over-powering said biasing means to permit closing of said valves.

2,794,497. ELECTROSTATIC AIR FILTER. Charles E. Besser, Charlotte, N. C. Application Dec. 22, 1953, Serial No. 339,786. 4 Claims. (Cl. 133-69.)



1. An air filter comprising a plurality of juxtaposed sheets of loosely woven stiff electrostatic plastic threads, each of said sheets having projections and depressions formed by distortions of some of the plastic threads forming said sheets therein, said projections serving to hold said sheets apart from each other and together with said depressions forming air spaces between said sheets, a corrugated foamed metal spacer positioned between some of said sheets, and frame means for confining said sheets and said spacer in juxtaposed relation.

2,794,494. FREEZER DIVIDER. Robert E. Moore, Amasa, Iowa, assignor to Amasa Refrigeration, Inc., Amasa, Iowa, a corporation of Iowa. Application Oct. 16, 1956, Serial No. 314,022. 3 Claims. (Cl. 239-22.)

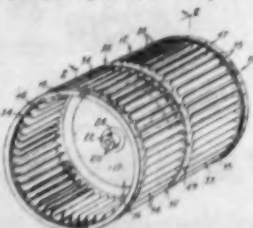
2. A divider and reinforcing construction for top opening freezer cabinets having substantially vertical side walls forming an interior load supporting

storage space comprising channel members positioned horizontally on the interior of at least two opposite side walls, said channel members being



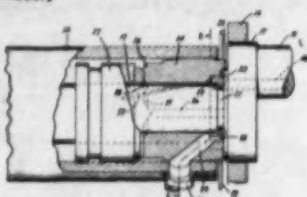
positioned with their open sides against said side walls and comprising a top and bottom flange and an integral web, a first integral slot forming an aperture in said top flange and web, a second integral slot vertically aligned with said first integral slot, said second integral slot forming an aperture in said bottom flange and said web, securing means extending through said web into fixed engagement with a receiving means on said vertical side walls, and a divider element including a horizontal rod member having a downwardly extending hook portion having a pointed end thereon at each end thereof and adapted to be received in said slots in said channel members, and vertically extending compartment wall means rigidly secured to said horizontal rod member to provide separate storage compartments, said horizontal rod member and hooks providing means for maintaining said side walls in a predetermined fixed position relative to each other in the presence of heavy loads in said compartment tending to urge said walls apart and simultaneously preventing tilting of said vertically extending walls.

2,794,547. BLOWER WHEEL. John H. Abbott, Los Angeles, and Stanley F. Shafte, Arcadia, Calif., assignors to Utility Appliance Corp., Los Angeles, Calif., a corporation of California. Application Dec. 1, 1950, Serial No. 196,092. 2 Claims. (Cl. 230-134.)



1. In a blower wheel, the combination of: a circular mounting plate having a mounting portion constituted by a flat, axially directed flange formed integrally therewith and a centrally located hub fastened thereto, an edge of said flange providing alignment means; a plurality of fasteners formed integrally with said flange; and a cylindrical drum having a flat, axially directed mounting strip engaged by said flange, said strip being provided with a plurality of receptacles for engagement by said fasteners, said drum having a plurality of banks of vanes formed integrally with said mounting strip and disposed on opposite sides thereof and the roots of the vanes in one of said banks being directly engaged by said alignment means.

2,794,548. COMPRESSOR OIL PUMP. Harley H. Bixler, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application April 1, 1953, Serial No. 346,228. 3 Claims. (Cl. 230-206.)

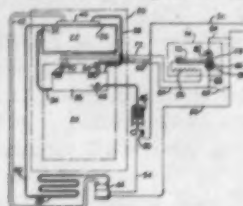


1. In a compressor of the eccentric type a crankshaft, a shoulder formed on said crankshaft for carrying an eccentrically disposed crankpin, a peripheral groove formed in said crankshaft at said shoulder for enabling finish grinding of said crankshaft and the inner face of said shoulder, an eccentric element carried fixedly on said crankshaft over said peripheral groove for serving as a pump rotor, positioning of said eccentric element over said groove rendering the remaining surface of said crankshaft employable for bearing purposes, a bushing, said bushing having journaled therein the portion of said crankshaft immediately adjacent said shoulder, said bushing including a counterbore in the face thereof adjacent said shoulder, said counterbore and said inner face of said shoulder cooperating to form a rotary pump cylinder for receiving said eccentric element, said face of said bushing further including a radial slot, a blade slidably positioned in said slot and resiliently following said eccentric element thereby to divide said cylinder into low and high pressure sides, and oil inlet and outlet passages communicating with said low and high pressure sides of said cylinder, respectively.

2,794,576. REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application July 13, 1951, Serial No. 234,645. 1 Claim. (Cl. 257-3.)

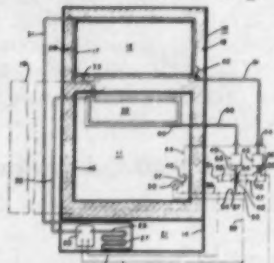
A household refrigerator comprising: a cabinet having separated unfrozen and frozen food compartments; a refrigerating system for said compart-

ments including a compressor, condenser, an unfrozen food evaporator and a frozen food evaporator the outlet of said condenser being connected to the inlet of said frozen food evaporator and the outlet of said frozen food evaporator being connected to the inlet of said unfrozen food evaporator whereby the refrigerant flows serially through the frozen food evaporator and the unfrozen food evaporator to the in-



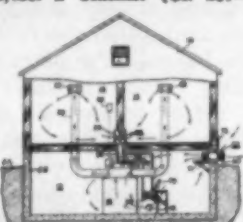
let of the compressor; a first thermostat responsive to temperatures of said unfrozen food evaporator and cycling said compressor to maintain said unfrozen food compartment below a selected refrigerating temperature; a heater in said unfrozen food compartment; a second thermostat independent of said first thermostat and responsive to temperature outside said food compartments for energizing said heater while said outside temperature is between substantially 54° F. and 26° F.; and heating means sufficiently energized in response to the energization of said heater and associated with said second thermostat to cause said second thermostat to cycle continuously between heater energizing and heater deenergizing positions while said outside temperature is between substantially 54° F. and 26° F. and to cause the duration of heater energizing cycles to increase as said outside temperature decreases.

2,794,577. AUTOMATICALLY CONTROLLED REFRIGERATING APPARATUS WITH HEATING MEANS. John M. Murphy, Oakwood, Ohio, assignor to General Motors Corp.



A refrigerating apparatus comprising: a cabinet having an unfrozen food storage compartment and a frozen food storage compartment therein, a closed refrigerating system associated with said cabinet including an evaporator for said frozen food compartment, another evaporator for said unfrozen food compartment, a motor and a compressor driven thereby and conduits connecting said evaporators in series flow relationship whereby said compressor at all times circulates refrigerant through said evaporators in succession to produce differential temperatures within said compartments, means adapted to apply artificial heat within said unfrozen food compartment, a power source, circuit means for supplying power from said source to said heat applying means and to said motor, a first switch in said circuit means, means responsive to an increase in temperature of the frozen food compartment evaporator above a predetermined value for closing said first switch to start said motor, said circuit means including a branch line having a second switch in series with said first switch for connecting said heat applying means to said power source, said circuit means also including a by-pass line having a third switch therein for by-passing current from said power source around said first switch to start said motor, means responsive to a predetermined increase in temperature of the unfrozen food compartment evaporator for opening said second switch and closing said third switch, and said heat applying means being energized only while said second switch is closed and when said first switch closes whereby said motor and said heat applying means are connected in parallel with said power source.

2,794,578. REFRIGERATING APPARATUS. Howard Cecil Swank, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 9, 1952, Serial No. 303,460. 2 Claims. (Cl. 257-8.)



1. The combination with a forced air heating system of the type having a furnace located in the furnace room and having a blower and having supply and return air ducts connecting the furnace to the space to be conditioned, a window mounted type of air

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

Corps of Engineers, U. S. Army, Office of the District Engineer, Little Rock District, 300 Broadway, Little Rock, Ark.

CONSTRUCTION OF OFFICERS CLUB AND MESS consisting of Masonry Unit Building, approx. 10,000 sq. ft., concrete floor and foundation, summer-winter air conditioning. Blytheville Air Force Base, Blytheville, Ark.—Job—IFB ENG-03-050-56-73B—Bid Sets available 10 May to 27 May 56—Bid opening 7 June 56.

Commander, New Orleans Army Terminal, New Orleans, La.
FURNISH AND INSTALL A TWENTY-FIVE (25) TON AIR CONDITIONING SYSTEM in Unit 1-2-B, New Orleans Army Terminal, New Orleans, La.; Dwg. Nr D-49 and Specifications are available—Job—IFB TC-16-049-56-136B—Bid Opening 1 June 56.

FURNISH AND INSTALL A NINETY (90) TON AIR CONDITIONING SYSTEM in Unit 1-5-A; Dwg. Nr D-492 and specifications are available—Job—IFB TC-16-049-56-25B—Bid Opening 1 June 56.

AIR FORCE

Warner Robins Air Materiel Area, Robins Air Force Base, Ga. Attn.: Director of Procurement and Production.

The following items are procured under IFB 912B, Local Purchase—Bid Opening 14 May 56.

DISHWASHING MACHINE, Automatic commercial type, Type 4, Fed. Spec. 00-M-31D and Amend. Nr 1, 1 ea.—FOOD MIXING MACHINE, Class A, Size 80, Fed. Spec. 00-M-38 and Amend. Nr 1, 1 ea.—GRIDDLE, ELECTRIC, self heating, Type A, Spec. MIL-G-2338C, 4 ea.—KETTLE, STEAM Jacketed, 60 gal. Spec. MIL-K-13387A and Amend. Nr 1, 2 ea.—KITCHEN RANGE, Electric, Type 1, Spec. MIL-R-11295C, 6 ea.—MEAT SLICING MACHINE, ELEC., Type 2, Class B, Spec. MIL-00-M-81 and Amend. Nr 1, 2 ea.—STEAMER, VEGETABLE, Pressure Type, size 6, Type 1, Spec. MIL-C-2354A—2 ea.—STEAM TABLE, heavy duty, Model B, MIL-T-12531, 2 ea.—TOASTER, Electric, continuous, heavy duty, Type 4, Size 2, MIL-T-12375, 2 ea.—VEGETABLE PEELING MACHINE, Type 1, Size C, Fed. Spec. 00-M-106 and Amend. Nr 1, 1 ea.—FRYER, DEEP FAT, Size 90A, Spec. MIL-F-002336A, 3 ea.—MACHINE, VEGETABLE CUTTING AND SLICING, 1 ea. (Specifications referenced above are for examination only at contracting office—They are not furnished with bid sets.)

GENERAL SERVICES ADMINISTRATION

General Services Admin., Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta, Ga.

AIR CONDITIONING FOR BASEMENT WORK ROOM, Orlando, Fla., Post Office and Court House—Job—IFB CR-4-1261A—Bid Opening 5-22-56.

General Services Administration, Region 3, Business Service Center, 7th & D Sts., S.W., Washington 25, D. C.

AIR CONDITIONING SIXTH STORY, GSA Regional Office Building, 7th and D Sts., S.W., Washington, D. C.—Job—IFB GS-R3-B-4094—Bid Opening 5-24-56.

General Services Administration, Region 3, Business Service Center, 7th & D Sts., Washington, D. C.

HUMIDITY AND TEMPERATURE CONTROL SYSTEM, Smithsonian Institution, Freer Gallery of Art, 12th and Jefferson Drive, S.W., Washington, D. C.—Job—IFB GS-R3-B-4052—Bid Opening 6-5-56.

General Services Administration, Region 10, Business Service Center, 909 First Ave., Seattle 4, Wash.

Furnish Labor and Materials for AIR CONDITIONING AND HEATING Alterations, Dept. of Interior Bldg., Portland, Ore.—Job—IFB CR-10-436—Bid Opening 6-25-56.

Furnish labor and material for NEW HOOD & EXHAUST FAN, U. S. P. S. Hospital, Seattle, Wash.—Job—IFB CR-10-437—Bid Opening 5-22-56.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

NACA Lewis Flight Propulsion Laboratory, 21060 Brookpark, Cleveland, Ohio.

GAS, compressed, "Freon," furnished in 2,000-lb. cylinders, Fed. Spec. BB-F-671A, (yearly contract)—Type "F-12," 80,000 lbs., Type "F-114," 10,000 lbs.—IFB C5771—Bid Opening 22 May 56.

CONTRACTS AWARDED THROUGH MAY 7, 1956

Kansas City District, Corps of Engineers, 1800 Federal Office Bldg., 911 Walnut St., Kansas City, Mo.

Air conditioning Units, self-contained, air-cooled, window-type, of one (1) ton nominal capacity. Contract No. DA-23-028-CIVENG 56-258 (IFB CIVENG-23-028-56-94)—160 ea.—\$26,631—York Corp., P. O. Box 1272, York, Pa.

General Services Administration, Region 5, 575 U. S. Courthouse, 219 S. Clark St., Chicago, Ill.

Water Coolers (IFB CHN-2073-A)—520 ea.—\$60,803—Westinghouse Electric Corp., 1625 K St., N.W., Washington, D. C.

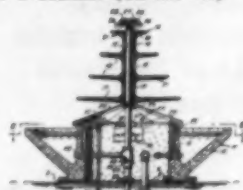
Navy Purchasing Office, U. S. Naval Supply Activities, Brooklyn 32, N. Y.

Fans, (Pume Exhaust, N140(131)57307B (IFB N140-1133056)—30 ea.—\$27,270—Oliver & McClellan, Inc., 50 Church St., New York 7, N. Y.

cooling and dehumidifying unit having an evaporator and a condenser mounted in a window of the furnace room and including first means for circulating air from said furnace room over said evaporator independently of said forced air heating system for refrigerating and dehumidifying the air surrounding said furnace to a temperature lower than the temperature of the air in the space to be conditioned and having a second means for circulating outside air over said condenser for discharging the heat and moisture removed from said air into the outside atmosphere through said window in said furnace room, and means for mixing the air circulated by said forced air heating system with the air surrounding said furnace, said last named means including means in the return air duct for diverting the return air into the space surrounding said furnace so as to mix said return air with said surrounding air, and means for thereafter admitting air from said cooled and dehumidified mixture to the inlet of said supply ducts whereby the air mixture is distributed through said supply and return air ducts by said furnace blower.

2,794,613. COOLING TOWER FOR AIR CONDITIONING SYSTEMS.

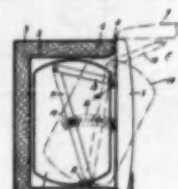
Thomas H. Leatham, Jr., and McKinley B. Leatham, Sr., Dallas, Tex. Application Jan. 21, 1952, Serial No. 267,472. 4 Claims. (Cl. 239-6.)



1. A cooling system comprising a cooling tower; a compartment, a water reservoir surrounding said compartment, a water inlet pipe, a first conduit concentric with said inlet pipe for conducting warm water delivered by said inlet pipe to the upper end of the tower for discharge and descent over the tower, said reservoir disposed below the cooling tower for receiving

water descending over the tower; a Venturi tube in said first conduit above the top of said inlet pipe therein; a second conduit within said compartment communicating with said first conduit below said Venturi tube and with said reservoir for recirculating water from said reservoir to the first conduit, water being drawn through said second conduit by suction created by water flowing upwardly through the first conduit and said Venturi tube; means communicating with the reservoir for withdrawing cooled water from the reservoir; a reservoir water replenishing pipe extending upwardly into said compartment, a valve thereon and float means in said compartment for automatically actuating said valve for maintaining the water in the reservoir at a predetermined level.

2,794,629. REFRIGERATOR SHELF CONSTRUCTION. Leonard W. Atchison, Louisville, Ky., assignor to General Electric Co., a corporation of New York. Application Aug. 5, 1953, Serial No. 372,460. 11 Claims. (Cl. 312-274.)



1. In a refrigerator cabinet, a food storage compartment of rectangular cross-section including an access opening, a vertical post, means mounting said post for swinging movement on a side wall of said compartment between an inner position and an outer position adjacent said access opening, and a plurality of shelves mounted revolvably and in vertically spaced relationship upon said post, said shelves being shaped to conform substantially to said compartment, and shelves being rendered unrevolvable by the walls of said compartment when said post is in said inner position, said shelves being free to revolve when said post is in said outer position.

(To Be Continued)

ASRE Annual Meeting--

(Concluded from Page 1)

neer for Carrier Corp., will be installed as president at a welcome luncheon on June 4.

Other officers to be installed are H. F. Spoehrer, vice president and treasurer of Sporlan Valve Co., first vice president; Cecil Boling, president of Bush Mfg. Co., second vice president; and D. D. Wile, vice president of Refrigeration Engineering, Inc., treasurer.

Directors who will be installed for three-year terms are: C. T. Hamilton, consulting engineer, Vancouver, B. C., Can.; Robert G. Werden, industrial sales manager for York Corp.; John Engalitcheff, Jr., president of Baltimore Aircoil Co.; and Everett P. Palmatier, director of research at Carrier Corp. Walter Cooke, American Blower Corp., will fill the unexpired term of D. D. Wile as director.

The program schedule planned by E. P. Palmatier, program chairman, follows:

MONDAY A.M., JUNE 4 General Assembly

Opening remarks by President Leon Buehler, Jr.

Address of Welcome by J. W. Snyder, director, Region VIII.

Submission for approval of the following standards:

1. Proposed revisions to Standard 18, "Methods of Rating and Testing Self-Contained Mechanically Refrigerated Drinking Water Coolers."

2. Proposed revisions to Standard 29-54, "Methods of Rating and Testing Ice Makers."

3. Proposed revisions to Standard 26-R (ASA B59.1-1950), "Recommended Practice for Mechanical Refrigeration Installations on Shipboard."

4. Proposed Standard 35—Part A, "Method of Testing Desiccants for Refrigerant Drying" and Part B, "Methods of Rating and Testing High Side Liquid Line Driers."

MONDAY A.M., JUNE 4 First Technical Session

Chairman, F. Y. Carter, manager, Refrigeration Div., Detroit Controls Corp.

"Factors Considered in Hermetic Motor Design," R. F. Munier, consulting engineer, Emerson Electric Mfg. Co.

"Use of Dissimilar Metals in Refrigeration and Air Conditioning Equipment," J. F. Mason, Jr., corrosion engineer, International Nickel Co., Inc.

"A New Instrument for the Moisture Analysis of 'Freon' Fluorinated Hydrocarbons," E. S. Taylor, service engineer, E. I. du Pont de Nemours & Co., Inc.

MONDAY, JUNE 4 (ALL DAY) Frozen Food Conference

Chairman, E. J. Robertson, research and development engineer, Wilson & Co.

"Bakery Goods," Niles Walker, director of product control and development, Arnold Bakers, Inc.

"Sea Foods," Charles Butler, chief, Technology Section, Fish & Wildlife Service, Washington, D. C.

"Poultry," W. C. Loy, chief chemist and director of dairy and poultry research, Wilson & Co.

"Citrus Industry," Theodore Allegri, Transportation Section, Marketing Research Div., U. S. Dept. of Agriculture.

"Fruits and Vegetables," K. G. Dykstra, director of laboratories, Bird's Eye Div., General Foods Corp.

"Cooked Frozen Foods," Jacob Fisher, president, Frigidinner, Inc.

"Meats," C. K. Wiseman, manager, Development Dept., Research Div., Armour & Co.

"Transporting by Truck," M. B. Green, general manager, U. S. Thermo Control Co.

"Warehousing," Vallee Appel, president, Fulton Market Cold Storage Co.

"Transporting by Rail," Jno. C. Rill, president, Fruit Growers Express Co.

MONDAY A.M., JUNE 4 Industry Cooperative Research Discussion

Moderator, Justin Neuhoft, vice chairman of ASRE Committee on Research, and manager of engineering, Commercial & Air Conditioning Dept., General Electric Co.

Open meeting for engineering executives and other company representatives to determine whether or not industry is interested in having ASRE set up Technical Task Forces to coordinate industry-wide efforts to solve given problems that have proved too difficult or costly for any one company to solve alone.

MONDAY P.M., JUNE 4 Conference on How To Obtain Engineers

Moderator, G. B. Priester, chairman of ASRE Education Committee and air conditioning engineer, Baltimore Gas & Electric Co.

Panel members will be representatives of large and small manufacturing concerns, a college professor, and a recent engineering graduate.

TUESDAY A.M., JUNE 5 Second Technical Session

Chairman, T. J. Ammel, sales engineer, Contract Dept., Kelvinator Div., American Motors Corp.

"Cross-Flow Cooling Towers," S. M. Zivi, head of Engineering Analysis Section, Midwest Research Institute, and Bruce B. Brand, chief engineer, Cooling Tower Div., Havens Structural Steel Co.

"Reduction of Total Solids by Deionization," Prof. W. A. Cunningham, University of Texas, and W. C. Mills, chemical engineer, Olin Mathieson Chemical Co.

"High Radiopasteurization as a 'New' Food Process Combining Gamma Radiation and Refrigeration," L. E. Brownell, supervisor of Fission Products Laboratory, University of Michigan, and S. N. Purohit, University of Michigan.

TUESDAY A.M., JUNE 5 Domestic Refrigerator Engineering Conference

Chairman, Paul H. Lawrenz, administrative engineer, American Motors Corp.

Subject: "Air Conditions Inside Household Refrigerators."

"Proper Storage Temperatures and Humidities," Miss Willie Mae Rogers, director of Good Housekeeping Institute.

"Design of Refrigeration Systems for Proper Storage Temperatures and Humidities," Gene McConnell, Whirlpool-Seeger Corp.

"Internal Condensation Prob-

lems," R. E. King, General Electric Co.

TUESDAY P.M., JUNE 5 Six Technical Forums

Sponsored by ASRE General Technical Committee. Vice chairman—Robert H. Tull, manager, refrigeration specialties engineering, Westinghouse Electric Corp. Will be completely unrecorded, open discussions.

1. Corrosion problems of blower equipment.

2. Methods of rating and testing transportation refrigeration equipment.

3. Contaminants in refrigerating systems.

4. Central air conditioning vs. room air conditioners for apartment houses.

5. What value suction line heat exchangers?

6. Leak testing methods and equipment.

WEDNESDAY A.M., JUNE 6 Third Technical Session

Chairman, S. J. Williams, manufacturers' representative, Cleveland.

"Temperature Changes in Refrigerated Rooms During Pull-Down Period," Prof. J. L. Threlkeld, University of Minnesota, and Tamami Kusuda, research engineer, Worthington Corp.

"At Last—A Practical Heat Pump," R. G. Werden, industrial sales manager, York Corp.

"Turbulent Flow of Air Through Capillary Tubes," F. G. Smith (retired), American Brass Co.

WEDNESDAY A.M., JUNE 6 Air Conditioning Conference

Chairman, R. A. Gonzalez, director of application-engineering and sales training, Airtemp Div., Chrysler Corp.

Subject—Packaged Commercial Units.

"Selection Considerations Between Packaged Air Conditioners and Central Station Equipment for Large Spaces," F. C. Wood, York Corp.

"New Field Application Problems for Air Cooled Condensing Equipment," M. D. Irwin, Carrier Corp.

"Condensing Surface and Air Quantities for Integral Horsepower Air Cooled Air Conditioning Equipment," J. R. Neuhoft, General Electric Co.

"Compressor Unit Design Considerations for Air Cooled Condensing Equipment," P. W. Wyckoff, Airtemp Div., Chrysler Corp.

J. H. Marsh, Jr., Fusite Corp., Cincinnati, general chairman, and the Host Committee have planned a full round of social, educational, and cultural events. Highlighting the informal proceedings will be Tuesday's "Over the Rhine" party complete with German folk music, cocktails, dinner, floor show, and dancing.

Several trips to inspect air conditioning and refrigeration installations in the Cincinnati area are planned for Tuesday afternoon. Women will visit the Taft Museum and some of the city's outstanding gardens. A Women's luncheon and card party will be held Monday at the Cincinnati Club. A golf luncheon and tournament is planned for Tuesday.

The social program also features attendance at a ballgame Sunday between the Cincinnati Redlegs and the New York Giants, a boat ride Sunday evening to nearby Coney Island for Midway fun, and a visit Monday evening to Meier's Wine Stube.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

CANADIAN WOULD like to represent American company in Canada. Capable of handling distributor organization across Dominion. Presently well established in refrigeration and air conditioning field. BOX A5535, Air Conditioning & Refrigeration News.

SALES REPRESENTATIVE—Newly established sales agency desires the following lines: tower circulating pumps, grilles and diffusers, and liquid chilling equipment, territory Alabama, Georgia and East Tenn. M. E. graduate with 10 years' excellent sales record. Top references furnished on request. Box A5539, Air Conditioning & Refrigeration News.

SALES ENGINEERING service specializing in refrigeration field with proven record, can guarantee sales of component parts (by reliable companies) suitable for application to air conditioning and refrigerating equipment—New England, New York, Penn., New Jersey, Del. Maryland. BOX A5541, Air Conditioning & Refrigeration News.

SALES ENGINEER with excellent sales record in air conditioning is interested in relocation in Florida or other southern area. Can sell and run air conditioning business or department for an aggressive firm. Experienced at contractor, also distributor level in building and running dealer organization. BOX A5542, Air Conditioning & Refrigeration News.

AIR CONDITIONING sales engineer is looking for connection as regional sales manager with progressive manufacturer who wants to get his share of the market out of a given territory. Comprehensive experience, ability to perform a thorough missionary job and get results. BOX A5543, Air Conditioning & Refrigeration News.

SIXTEEN YEARS' experience in development and research with manufacturer of heat transfer products; coils, heating, refrigeration and air conditioning equipment. Registered professional Mechanical Engineer, thirty seven years old desires engineering position in administration, research or development with progressive concern. BOX A5544, Air Conditioning & Refrigeration News.

INSTALLATION and service manager with over 25 years' experience covering all phases of the air conditioning and refrigeration field. Know how equipment should be installed and properly maintained. Would be most valuable as factory field supervisor. Free to travel anywhere. BOX A5545, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

OPPORTUNITY FOR manufacturer's representative: To increase your earnings, sell a full line of freezers, beverage coolers, display cases, dual temperature reach-ins and walk-ins. We manufacture a quality line to meet competition. Territories now available, write HOWARD REFRIGERATOR CO., INC., 4745 Worth Street, Philadelphia 24, Pa.

MAN THOROUGHLY experienced in sales of packaged air conditioning equipment to head commercial department of well established heating and air conditioning company. Contact Mr. S. G. Braun, THE NATIONAL HEATING COMPANY, 1999 Central Avenue, Cincinnati 14, Ohio.

FIELD SALES Engineers—To sell refrigeration and air conditioning equipment manufacturers in midwest and east. Well known company expanding its operations. Salary, commission traveling expenses. Real opportunity for earnings and advancement for men with sales experience and knowledge of refrigeration systems. Write details of experience to BOX A5525, Air Conditioning & Refrigeration News.

WANTED—TWO district managers: One to be located in Metropolitan New York area and one in San Francisco. To supervise sales offices of prominent manufacturer of heating, cooling, and air conditioning equipment of East and West Coast areas. Send complete resume of education, experience, and salary requirements, to BOX A5532, Air Conditioning & Refrigeration News.

DISTRICT SALES managers—For air conditioning company. Established territories available. Complete line of air conditioners, from 2 to 30 tons, water-cooled and air-cooled for commercial and residential installations, including year-round packages and conversion units. Nationally known firm, backed by aggressive advertising and promotion program, liberal finance plans. Reply in confidence, stating full details, experience, references, etc. BOX A5540, Air Conditioning & Refrigeration News.

UNUSUAL OPPORTUNITY for a refrigeration engineer is offered by Midwest company in expanding program. Manufacturers of refrigeration systems, air conditioners, and allied specialized products. Engineering background preferred. Send complete information and personal interview will be arranged. Good working conditions with modern equipment and employees' benefits. BOX A5546, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

ARCTICAIRE AIR conditioning equipment 2, 3 and 5 ton packaged water chillers, air or water cooled. Direct expansion air conditioning systems 2, 3 and 5 ton, air or water cooled, self contained and remote types. Write for literature and prices. ARCCO, MANUFACTURERS AGENTS, INC., Merchandise Mart Bldg., 2201 Grand Avenue, Kansas City, Missouri.

AJAX ELECTRIC ICEMAN—Complete new parts stock available. Immediate delivery. Many prices under factory list. Write for price list. AJAX PHILADELPHIA, INC., 3617-23 Lancaster Ave., Philadelphia 4, Pa.

FOR SALE—Thirty Pan-Electric automatic ice cube makers, Tecumseh sealed unit, water cooled, 1,400 cubes a day. Brand new and in original crates. Also selling out units, motors, compressors, fittings, pulleys, fans, blowers and Servel sealed unit domes. Best offer. A. BARTUS REFRIGERATION, 978-982 Milwaukee Ave., Chicago 22, Illinois.

2 NEW Filtrine M43RACP water chilling plants, 1½ h.p. Frigidaire compressor, recirculation pump, 48 gallons storage, cools 80 degree inlet to 45 @ 62 g.p.h., contractors list \$1,350.00—\$775.00 each. McCray mortuary box, 3 tray, excellent condition, complete \$685.00. Guaranteed as represented. R. JOHNSTON, Box 565, Glendale, California. Citrus 2-3008.

NEW SELF contain-1 Kesco automatic condensate water disposal pumps for air conditioners ice cube bins; at your local wholesaler. Available in 10 and 20 foot heads.

NEW YORK, Abco Refrigeration, 1615 Second Ave.

MT. VERNON, Eastern Supply, 521 East Third Street

SYRACUSE, Gould-Farmer Co., 1020 W. Genesee Street

WHITE PLAINS, County Seat, 111 Central Ave.

NEWARK, N. J., Tesco Distributors, 78 Boston Street

DAYTON, OHIO, W. H. Kiefaber Co., Refrigeration Dept.

SACRAMENTO, CALIF., Associated Refrigeration, 1717 Eye Street

SEATTLE, WASH., Refrigerative Supply, 204 W. Republican

TAMPA, FLORIDA, Leo S. Bosage Co., 1546 Franklin Street

Distributors write to KESCO PRODUCTS CORP., Springfield Gardens 13, N. Y. for sample pump and literature.

15-TON CARRIER evaporator—2 10-ton units—new—other items all or part.

NORTHLAND REFRIGERATION SALES COMPANY, 1825 S. Kedzie Ave., Chicago, Illinois.

AIR CONDITIONING value: 2 h.p. hermetic compressor F-12 230V, 1/phase HD200, 2 h.p. air cond. evaporator 23½" L x 18" H x 3½" W. 2 h.p. air cond. condenser 24" L x 24" H x 4½" W. Also included 2 ton F-12 T. X. Valve & dual pressure safety cutout switch. Complete matched component kit as described \$179.50. Freight prepaid anywhere in the continental U. S. A. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

WHOLESALE (CALIFORNIA) air conditioning and refrigeration equipment and parts business. Best manufacturing names. Several exclusives. Will sell all or part this long established fast growing leader in field. Sales engineering knowledge desirable. Age, health sole reason for offer. Give complete background and financial ability in first letter. Confidence respected. BOX A5536, Air Conditioning & Refrigeration News.

ARI Told Old Selling Methods May Fall--

(Concluded from Page 37, Col. 5) emphasis on building up membership in our product sections.

In a talk which many members declared to be the "most provocative" of any presented in recent years, although somewhat controversial, Eugene B. Mapel, vice president of Barrington Associates, New York Management Consultants, declared that new methods of marketing, especially the rise of discount houses, are bringing about an entirely new concept of sales in the consumer durable goods field.

Gov't To Save Dealers?

Following are some of the "provocative" statements made by Mapel:

Citing the fact that more than 150 automobile dealers surrendered their franchises in the first three weeks of April, Mapel said that "nothing short of an act of Congress can preserve the traditional method of distributing automobiles with an artificial and unrealistic method of price packing." He also predicted that within a very short time, one of the "Big 5" in the automotive field would try merchandising its cars without a dealer setup.

List prices are "largely a myth, and many discount houses are now upgrading their services and methods of selling to compete with department stores and other dealers in appliances."

What Can Save Dealers

The reason the independent dealer is failing is because he no longer makes available the services he once rendered, which induced the public to trade with him. Part of this is his fault, part of it is due to improvements in the product.

If the independent dealer is to survive, he must have something to substitute for the traditional benefits which he has provided. He must also get some educational assistance from manufacturers or other sources in the matter of such things as marketing methods and inventory controls.

The most important element in the future success of any industry or individual company will be methods of marketing—not such factors as increase in gross income, or other economic factors.

Fight for the Dollar

"The important point to you," said Mapel, "is not that the carpenter's income will have increased from \$3,100 a year to over \$7,000 per year, but whether or not he will use any part of that disposable income to purchase air conditioning."

"The consumer is not only 'king,' he is now a well-informed 'king' who knows what he is getting for his money, and he expects a full dollar of product and service for his dollar in expenditure."

Continuing increase in volume is "the facts of life" for the survival of any company today. It is no longer possible to sit back and project business success on a "plateau" volume of business.

In conclusion, Mapel called for a re-examination of every selling method on a "realistic rather than a historical method" to in-

sure maintenance of competitive position in today's market.

Another speaker, Dr. Jules Backman, professor of economics at New York university, declared that the recent rise in the discount rate by the Federal Reserve Board was a necessary move to curb the danger of inflation resulting from an excessive expansion of debt.

"Consumer credit, mortgage debt, and bank credit have been expanding at rates which cannot be sustained. In 1955, consumer credit rose 20.2%, bank credit 17.3%, and mortgage debt, 17.2%. This rate of credit increase compared with a rise of 7.4% in gross national product and with the normal rate of increase of about 3%. The result has been pressure on prices."

"Further increases in credit have taken place this year. Since last July, the comprehen-

sive index of wholesale prices has risen by 2.3%, but industrial prices have risen about 5%. A further rise in these prices is now threatened as a result of a new round of wage and other labor cost increases. If these trends are not reversed, a further rise in interest rates and a tightening of credit will be necessary.

Outlook for Last Half

Dr. Backman forecast that "On balance, the expansionary and negative factors in the national economy appear to about offset each other. The outlook is for a continuation of the general level of business activity at about recent levels. I anticipate no upsurge in the economy in the last half of 1956 in terms of physical volume."

"The actions of the Federal Reserve System in raising interest rates and tightening credit will also act against any imme-

diate upturn. If the credit screw is tightened further, some curtailment of economic activity—possibly a 'gentle decline'—must be considered a strong possibility. However, in dollar terms, a somewhat more favorable picture will be shown as a result of the modest price rise anticipated.

"The short term and long term outlook for the air conditioning industry is very bright. Currently, only one home out of 20 uses air conditioning in one or more rooms. The industry faces a major period of expansion in volume as more rooms and more homes are air conditioned. New housing without air conditioning experiences a competitive disadvantage."

"A rapidly-growing number of factories and offices have been discovering the very favorable impact on labor productivity of air conditioned space. Accordingly, sales to industrial users

also will continue to rise sharply. A favorable outlook for disposable income for the remainder of 1956 provides the background for expanding sales of air conditioners this year—weather permitting."

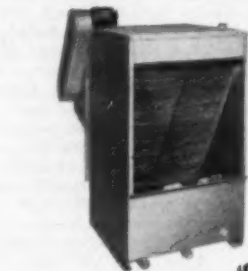
Eustis To Speak at Final Detroit RSES Meeting May 17

DETROIT—At its last meeting of the season, the Greater Detroit chapter of the Refrigeration Service Engineers Society will hear Peter Eustis, chemical engineer with Virginia Smelting Co., discuss "Water Treatment of Evaporative Condensers and Cooling Towers."

The meeting will be held on Thursday, May 17, in the UAW-CIO Hall at 20424 John R. It will begin at 8 p.m. Refreshments will be served.



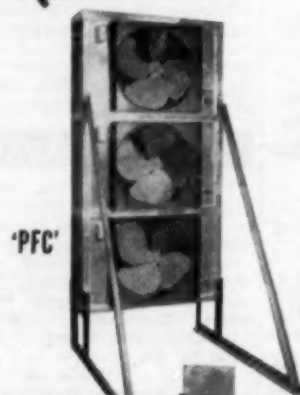
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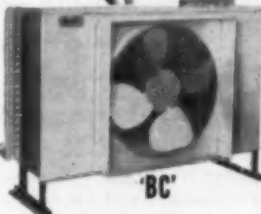
'CDT'



'IEC'



'PFC'



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Wherever water is scarce, expensive, or contains excessive impurities . . . or wherever disposal facilities are inadequate . . . a Bush water-saver can solve the problem. Whatever your need or preference in water-saving equipment, there's a Bush unit to meet it.

All Bush water-savers incorporate the most advanced engineering design . . . feature rugged, top quality construction.

For single-source simplicity, select BUSH. And for capable engineering or application assistance, call on the experienced Bush sales engineer in your area.

'CDT' COPPER DECK COOLING TOWERS

All copper decking cannot rust or rot. Sectional construction permits arrangement with blower fan or propeller fan . . . permits substitution of Inner-Fin coil for operation as evaporative condenser.

'IEC' INNER-FIN EVAP CONDENSERS

Inner-Fin coil construction, a Bush exclusive, permits compactness of construction impossible in other units. Can be operated DRY where conditions warrant. Can be arranged with blower fan or propeller fan . . . converted to cooling tower by substitution of copper decking for condenser coil.

'PFC' PROPELLER-FAN CONDENSERS

Permit condensing of refrigerant without use of water. Two basic models, 2.2 Tons and 3.3 Tons, can be combined by mounting in banks to obtain any desired tonnage.

'BC' BLOWER CONDENSERS

For waterless condensing. Available in capacities up to 20 Tons, units feature low noise level . . . quiet operation. Famed Inner-Fin coil construction, rugged all-steel cases with durable rust-resistant finish. Easy to install; available arranged with blower fan or propeller fan.

'PS' PRESSURE STABILIZERS

Automatically maintain satisfactory head pressure when air cooled condensers operate outside in low ambient temperatures.

Request catalogs containing complete specifications on units shown.

BUSH MANUFACTURING CO.

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